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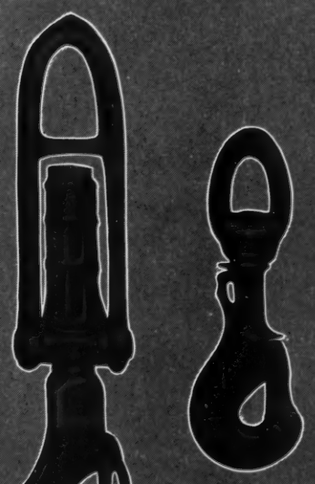

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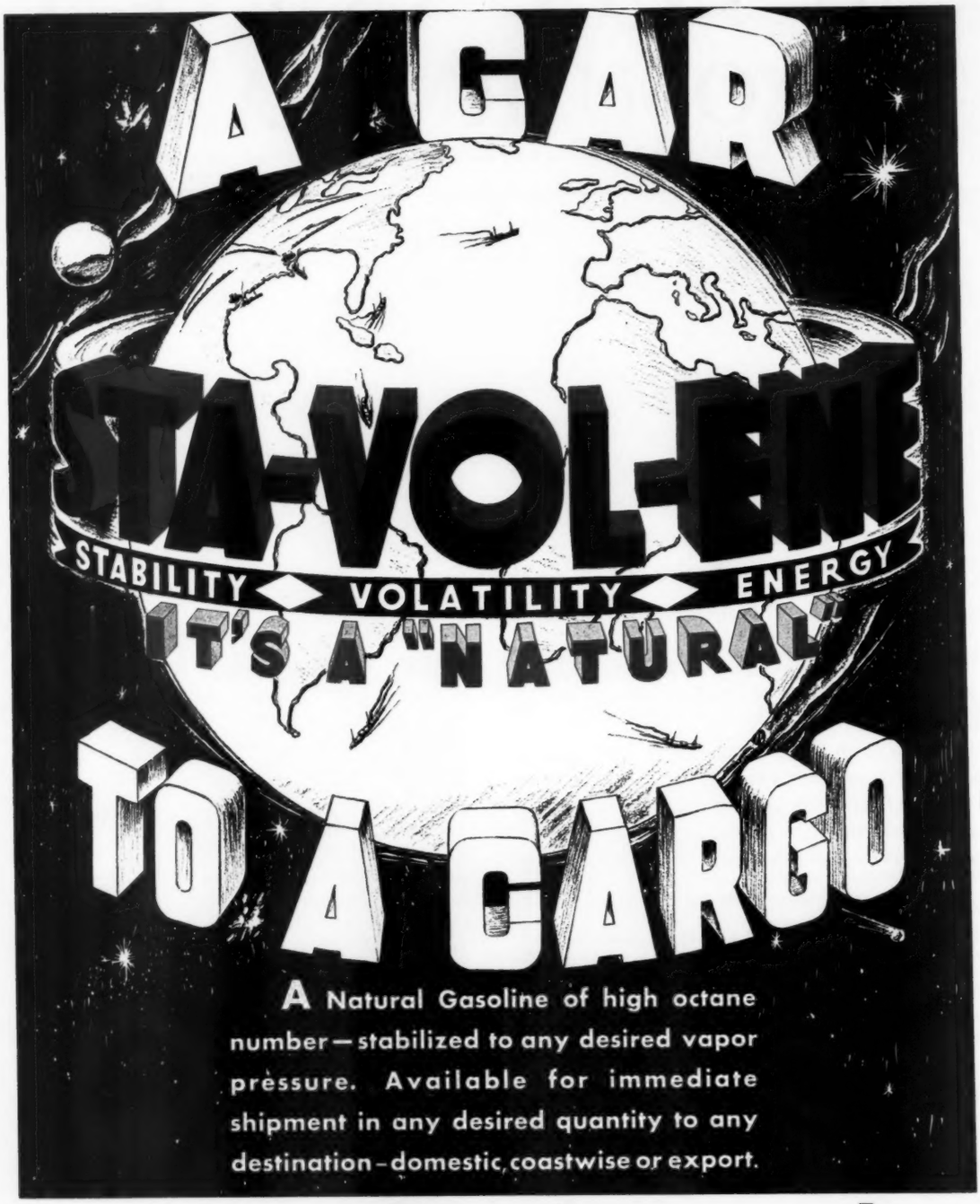
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Pool Discoveries in Several States, and Hope for Law and Order Looms in East Texas

By JAMES McINTYRE

THERE is real hope that the day of 25-cent crude oil in East Texas will soon be a thing of the past, and that the law violator of the future, if caught, will not simply be fined, but will be jailed. Recent action of Administrator Ickes in strengthening the hands of the legal administrators in East Texas and the energetic work of the Texas authorities combine to make it hard for the hot oil producer to ply his illegal trade. With this big hole stopped up the oil industry can expect to go through 1934 with something beside red ink on the industrial ledger. There is a sharp and incessant demand for crude oil in the northern part of the Mid-Continent and in California, and even some Texas oil purchasers are complaining because the present production allocation is too low to make it possible for them to get all the oil they need. The general situation promises to improve very shortly under the new order.

That big territory known as the Gulf Coast Field, continues to report the most energetic leasing play in America. Just now it is in the Splendora district in eastern Montgomery County, just over the line from the new Cleveland pool in Liberty County. Important trades involving large sums of money have taken place there in the recent past. The Iowa, Louisiana, pool was extended a half mile westerly with an 840-bbl. well in the 7,000-foot horizon. The Louise area in Wharton County, Texas, very closely watched, is still a problem. Oil is there, but none of the wells thus far drilled has opened anything big from the three sands that have shown oil.

In Oklahoma a pool was opened last week south of Davenport, in Lincoln County, by the Amerada Petroleum Corp., with an 800-bbl. well in Hunton lime. A prospective discovery in Kansas north of Wichita is interesting oil men in that state.

In North Louisiana Haynesville Partnership's Trinity sand test in the Haynesville field was showing oil and gas at about 4,595 feet. A deep test in Bossier Parish proves the existence of five producing horizons from the Nacatoch to the Trinity, both inclusive, and is important.

In Montana, The Texas Company has a 250-bbl. well in the South Cut Bank area, in Glacier County, 9 miles from the Cut Bank pool.

A new pool was opened in Evart township, Osceola County, Michigan by the Sun Oil Company. It is in the upper Traverse formation, bottomed at 3,185 feet. The discovery is 35 miles northwesterly from Mt. Pleasant.

Three new locations were staked in the Long Lake area in Anderson County, East Central Texas in the past week, indicating that there is no lack of confidence in that part of the state as a prospective big oil field.

Crude Oil Production in the United States

Estimated daily average production for the week ending January 27, and a comparison with previous week and one year ago, follows:

	Jan. 27	Jan. 20	Jan. 28, 1933
Oklahoma—			
Oklahoma City	155,085	217,530	63,565
Seminole-St. Louis	102,125	108,050	112,640
Remainder of State	210,150	209,160	194,030
Total Oklahoma	467,360	534,740	370,235
East Texas—			
Lathrop	192,325	191,070	113,825
Kilgore	138,270	137,225	90,874
Joiner	122,280	121,385	93,035
Total East Texas	452,875	449,680	297,734
West Texas	122,362	121,837	157,008
North Central Texas	83,548	82,754	70,661
Texas Panhandle	42,592	43,342	46,196
East Central Texas	42,954	43,198	48,505
Gulf Coast—Texas	158,610	161,475	130,315
Southwest Texas	44,071	45,220	55,853
Total State of Texas	947,012	947,506	806,272
Kansas	107,435	114,645	94,225
North Louisiana	27,785	27,000	30,165
Gulf Coast—Louisiana	45,693	44,421	34,412
Arkansas	32,110	32,160	32,150
Eastern Fields	122,500	124,500	111,000
Rocky Mountain area	78,730	79,630	75,590
California—			
Santa Fe Springs	42,750	42,000	53,750
Long Beach	55,500	59,200	67,000
Playa Del Rey	9,650	10,150	12,750
Elwood	14,350	12,250	13,500
Kettleman Hills	51,000	48,000	54,000
Remainder of State	277,750	287,500	259,000
Total California	451,000	459,100	460,000
Total United States	2,279,625	2,363,702	2,014,049

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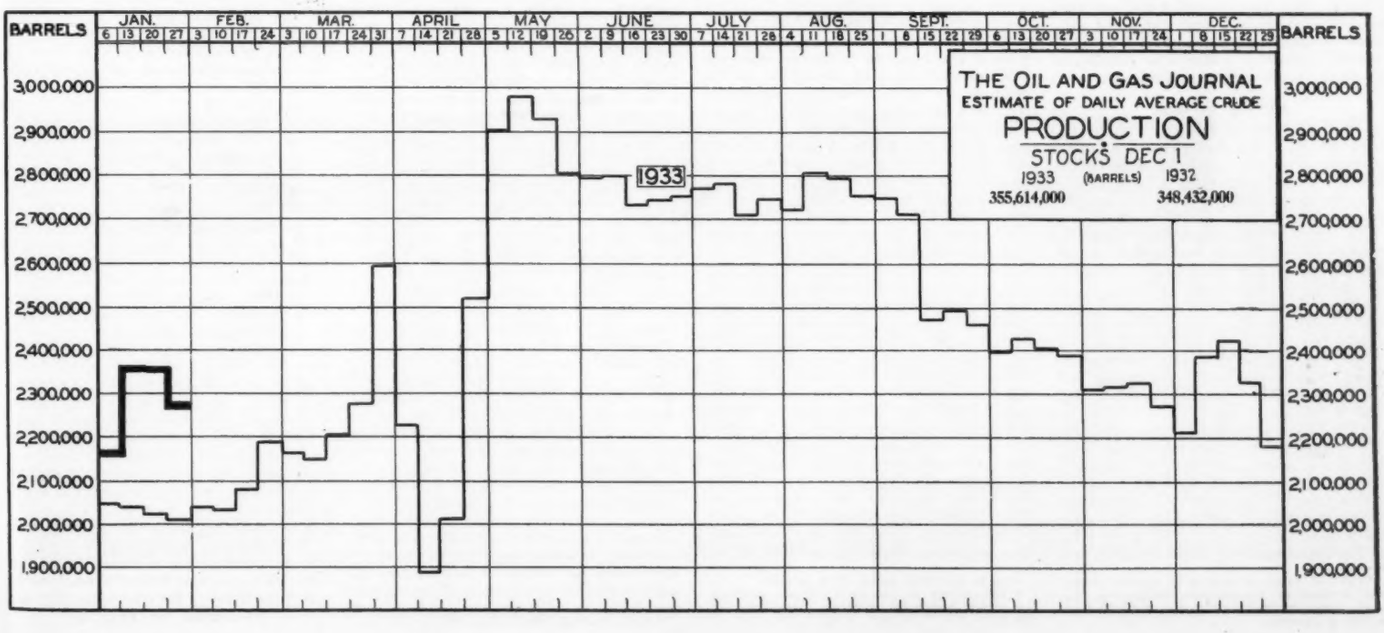


Report Progress in Solving Problems of Extreme Pressure Lubricants for Motor Vehicles

By OSCAR C. BRIDGEMAN
Bureau of Standards*

In the fall of 1931 the automotive and petroleum industries enlisted the assistance of the Bureau of Standards in the solution of the problems encountered in the use of extreme pressure lubricants in automotive equipment. These problems were concerned primarily with the requirements which these lubricants should meet in order to perform efficiently in the gears of differentials operating under high tooth pressures. The function of the Bureau of Standards, therefore, was to develop test methods for the various properties of extreme pressure lubricants, which would be significant as regards service performance. Investigation of the effect of chemical composition on the properties of the lubricants was not directly involved, but the availability of significant test methods would, of course, furnish the basis for the development of satisfactory lubricants. The Bureau of Standards undertook this investigation under the sponsorship of the S.A.E. lubricants research subcommittee, composed of representatives of the automotive and petroleum industries, of the gear and bearing manufacturers, and of various operators' organizations. Real progress has been made to date in the investigation, although the work has been seriously handicapped by financial difficulties.

The first step undertaken was to collect all available information on the subject as the basis for the formulation of a detailed program. A large number of organizations furnished to the bureau the data which they had obtained on extreme pressure lubricants, both in laboratory tests and in service. Analysis of these data indicated:

1. The properties of these lubricants which are significant from the standpoint of performance in service, and for which tests are desirable.
2. The great diversity of test methods for the various properties and the contradictory results obtained by different test methods.
3. The almost entire lack of information correlating laboratory test data with service results.

On the basis of this analysis, a general problem was outlined enumerating the various properties for which test methods should be developed, and a detailed program for immediate consideration on load-carrying capacity which was considered to be the most important property.

General Problem

The available information indicates that the following five properties of an extreme pressure lubricant are significant from the standpoint of use in differential gears, and probably in any type of gearing:

(a) Load-carrying capacity, which represents the maximum load which can be applied under any given conditions without seizure of the metal surfaces.

(b) Coefficient of friction, which controls the amount of heat generated in the gear teeth.

(c) Stability, which involves maintenance of high load-carrying capacity, and freedom from thickening or from sludging during use.

(d) Tendency to cause wear, which includes both the effect of inherently abrasive material in the lubricant evidenced under light load, and the effect of the extreme pressure compound in increasing or decreasing wear under heavy load conditions.

(e) Corrosiveness, which involves not merely darkening of the metal surface but actual damage to the metal by chemical reaction.

These are the properties of an extreme pressure lubricant for which laboratory tests are needed, tests which have real significance as regards service performance. The development of test apparatus and methods for these properties was adopted in the spring of 1932 as the general program of investigation by the lubricants research subcommittee. Until such tests are developed, extensive service tests furnish the only means for determining whether any given lubricant is satisfactory, for determining whether one lubricant performs more efficiently than another, or for developing new types of satisfactory lubricants.

Load-Carrying Capacity

As a start towards the solution of the general problem, the lubricants research subcommitte requested the bureau to develop first a test for load-carrying capacity, since the other properties of an extreme pressure lubricant are of no consequence if the lubricant will not carry the desired load. Nine lubricants representative of the general types being sold were selected by the subcommittee and were furnishd to the bureau to use in conducting the investigation. As a preliminary step, four of the machines more commonly used for testing load-carrying capacity were made available and comparative tests were made with these machines on the nine lubricants employing the operating conditions recommended by the manufacturers of the machines. The results[1, 2] indicated that under these conditions of operation, no two of the machines rated the lubricants even in the same order. The next step was to ascertain whether any two of the machines could be made to rate the lubricants in the same order by varying the operating conditions. This was done and the various lubricants were tested on each machine, varying the operating conditions over as wide a range as possible within the limitations of the machines. The general conclusions[1] are as follows:

1. No set of operating conditions was found for each machine such that the machines would rate all of the lubricants in the same order.
2. No one machine rated the lubricants in the order of their service performance.

Probably the major reason why these machines were not entirely satisfactory was due to the fact that the ratio of pressure to applied load changed during the test run as the result of increasing area of contact caused by wear. This change made the test results very sensitive to differences in operating conditions, in particular to the rate of application of load. Accordingly, it seemed desirable to develop a machine in which the ratio of pressure to applied load would remain constant throughout the entire test run. An experimental apparatus[3] based on this principle was built at the Bureau of Standards and consisted essentially of two self-aligning rolls acting under load and so mounted that each could be independently driven. With this arrangement it was possible to vary the absolute and relative speeds of the rolls over wide limits. Provision was also made for applying load at various constant rates.

Tests were made with this experimental machine at various speeds, rates of loading and lubricant temperatures using the lubricants previously selected by the subcommittee. The values for load-carrying capacity were found to vary over fairly wide limits depending upon the operating conditions. However, considering the data on each lubricant as a whole, the results were in accord with the service performance of these lubricants. This represented a big step forward and the subcommittee requested the bureau to proceed with the design of a self-contained research machine along the lines of the experimental machine. Authorization was granted for the construction of a number of these machines for co-operative work by interested laboratories in order to test the conclusions of the bureau by experiments on a more extensive group of lubricants and in order to select the most significant set of operating conditions for application of the results to various types of service. This latter phase of the co-operative tests may make possible considerable simplification in the test apparatus.

The bureau has now completed the design of the research machine for measuring load-carrying capacity and arrangements are being made for its construction. The machine is self-contained and is arranged so that wear and friction measurements can be made with it, although in the latter case a small dynamometer or equivalent is needed as an accessory. Provision has been made for varying the speed of the faster roll from 75 to 3,000 r.p.m. in five steps, and for each speed of the faster roll, the speed ratio between the faster and the slower roll can be varied from 60 to 6.7 by five steps. This gives a very wide range of rubbing speeds. The rate of loading can be varied from 20 to 350 pounds per second per inch of linear contact between the rolls. All gears are built into the machine and gear changing is automatic. The rolls, or test specimens, are readily obtainable and are similar to the cups of roller bearings.

Pending the construction of the research machines and the standardization of a routine testing machine and method, the subcommittee has arranged with the bureau to have tests made for interested parties on the existing experimental machine. This testing is done on a co-operative basis with the lubricants research subcommittee and application blanks are obtainable from the research manager of the society.

Coefficient of Friction

The coefficient of friction obtained with an extreme pressure lubricant is of interest in that it affects the operating temperature in the gear box under steady load conditions. This factor of operating temperature is very important for if the temperature is high, decomposition of the lubricant may occur rapidly and there may be a marked increase in consistency of the lubricant, even to the extent of causing it to become comparatively hard.

Some preliminary data have been obtained on coefficient of friction with several lubricants using the Timken machine operated at various speeds and loads. In order to avoid gross errors due to wear, the specimens were first run in until the width of score on the test block became essentially constant. As a check on the comparability of the results, a reference speed-coefficient of friction curve was obtained with a mineral oil before the runs on each extreme pressure lubricant. At light load, there was little difference in coefficient of friction between the various lubricants at equal rubbing speeds, when account was taken of differences in viscosity. At intermediate loads, large differences were found for the various lubricants. For example, with one lubricant the coefficient of viscosity was 0.03 while with another lubricant it was 0.09, both values being obtained under comparable conditions. At loads, near seizure, there appeared to be a tendency for the coefficient of friction of the various lubricants to become nearly equal.

The above results are preliminary and it is planned to make a much more extensive investigation of coefficient of friction when the new research machine becomes available. Results with this new

(Continued on Page 37)

Present Status of Extreme Pressure Lubricants Tests

The work at the Bureau of Standards on the development of significant test methods for extreme pressure lubricants in co-operation with the S.A.E. Lubricants Research Subcommittee has reached the following stage:

(1) A machine has been developed for measuring load-carrying capacity which, as far as available information goes, rates the lubricants in the same order as their service performance.

(2) A research type of machine, similar to the experimental one developed at the bureau, has been designed and plans are being made for its production. Pending the construction of these machines, arrangements have been made for the testing of miscellaneous extreme pressure lubricants on the experimental machine.

(3) Preliminary information has been obtained on co-efficient of friction, wear and stability of load-carrying capacity which indicates that there are large differences between extreme pressure lubricants in these respects.

In order to obtain a complete solution of the problem, there still remains:

(a) Co-operative work on the new lubricant tester with a wider variety of lubricants and the standardization of a routine test apparatus and method for the measurement of load-carrying capacity.

(b) Completion of the investigation of co-efficient of friction, abrasiveness under light load, and stability of load-carrying capacity and standardization of significant test methods for these properties.

(c) Investigation of wear under heavy load, stability of the lubricant as regards thickening, and corrosiveness, leading towards the development of test methods.

*Part of paper presented at annual meeting, Society of Automotive Engineers, Detroit, January 22-25, 1934, and published in society's Journal.

[1] S.A.E. Journal, June, 1933, p. 217.

[2] Proceedings of the 13th annual meeting, American Petroleum Institute, Sect. 3, p. 114, 1932.

[3] S.A.E. Journal, December, 1933, p. 402.

Industry Will Re-Sign Agreements as Revised to Become Effective Within Two Weeks

By ANDREW M. ROWLEY

WASHINGTON, D. C., Jan. 30.—Stabilization of price in the petroleum industry seems now to be a matter of two weeks, probably less. By that time the oil agreements and uniform contracts will have been approved both by the oil administrator, Harold L. Ickes, and signatories of the oil companies and the oil business will be operating along sound business lines. Prices will be stabilized, price wars eliminated, and every company in the business can gauge its operations so that it will show a reasonable profit on its business. This reads like the millennium but if oil companies go along with this proposition and live up to it, both in spirit and letter, you can throw your red ink bottles out the window.

It must be understood, of course, stabilization of prices can only be accomplished after the purchasing agreement is effective and the national petroleum agency, provided for in that agreement, is in full operation. The purpose of this agency is to purchase, hold, and, in an orderly manner, dispose of surplus gasoline which threatens the stability of the oil price structure in an effort to bring the price of gasoline into proper relationship with the present prices of crude oil and to maintain and support such relationship. Naturally, it will take some time to accomplish this purpose but the machinery therefor is expected to be in operation within the next two weeks.

According to present indications, signatories of the purchasing and marketing agreements and contracts will be called to meet here the latter part of this week or the first of next week, to go over the redrafted forms and sign the agreements and contracts again.

For three days last week, leaders of the industry—majors and independents—met here and discussed the modifications made to the oil agreements and contracts they had signed. The modifications were made by Mr. Ickes.

Important Decision

One important decision was made, probably in conjunction with many others. It was that the petroleum industry does not admit the right of the Federal Government to modify agreements or contracts which have been signed. Consequently, the agreements and contracts will be signed again. Here is the procedure:

Judge Amos L. Beaty, Judge C. B. Ames and Axtell J. Byles were appointed as a committee to confer with the Petroleum Administrative Board and Mr. Ickes on the matter of redrafting the contracts and agreements. This committee will see that the sense of the meeting here this week is embodied in the agreements and contracts as finally drafted. The agreements and contracts, as redrafted, will be presented to Secretary Ickes for his approval and then will be re-signed by the different oil companies. They then will be effective.

The new agreements and contracts will embody the reservations and modifications made by Mr. Ickes, which were outlined in The Oil and Gas Journal of January 25. The meeting here this week was entirely harmonious and there was very little argument over the reservations imposed by the oil administrator. The oil men were united on the point that modifications made to the agreements or contracts would not be binding on signatories to these agreements and contracts unless the signatories signed again.

The administrator and the President have reserved the right to cancel or modify these agreements and contracts. It is admitted they may be canceled at will but if they are modified, it will be necessary to get the oil companies to sign them again before the industry will feel they are binding.

Bennette Likely Manager

Howard Bennette, president of the Western Petroleum Refiners Association, seems likely to be selected as manager of the National Petroleum Agency, the organization provided for in the purchasing agreement. While the representatives of the companies signing this agreement, who were here this week, were not designated officially as governors of the association, it is understood steps were taken towards selection of an executive committee, officers and a manager so that no delay would occur when the agreement was signed by the oil companies and approved by Mr. Ickes.

It was suggested at the meeting here last week that headquarters for the National Petroleum Agency be established in Washington with branch offices located at other principal centers, such as Tulsa and Chicago.

Mr. Ickes has announced no regulations would be issued at this time to cover the use of proposed standard forms of contract under the marketing agreement. It had been understood such regulations would be issued but as the contracts are being changed, the regulations probably will come later when the contracts and agreements are approved in final form. The industry has been advised that the contracts as issued and approved a week ago, are being changed and should not, under any circumstances, be used in their present form.

Active Policy in East Texas

Some concern is felt over the continued production of hot oil in East Texas and what influence this production and the gasoline manufactured from it will have on operations of the purchasing agreement and agency. It is felt here this agency will not attempt to buy surplus gasoline if such gasoline is manufactured from hot oil produced in violation of regulations. Stricter enforcement is necessary. This was pointed out to the administration a week ago by the special delegation which came here from Texas. As a result of the visit of that Texas delegation a new method of handling prosecutions in Texas against violators of the oil code and production curtailment orders has been announced.

Attorney General Cummings and Administrator Ickes agreed on a plan whereby the two special assistants to the Attorney General now in Texas, Charles I. Francis, at Tyler, and LaVergne Francis Guinn, at Dallas, in co-operation with the U. S. district attorneys in Texas, can prosecute violators without requesting authorization from Washington when they are agreed prosecution should be started.

Administrator Ickes explained that Special Assistants Francis and Guinn, as attorneys on the staff of the Petroleum Administrative Board, which the administrator established to assist and advise him in enforcing the code, planned immediate action against all reported violators.

Administrator Ickes and Attorney General Cummings decided on this course of action after the former heard statements from a special committee in Texas, representing the state planning and co-ordination committee and composed of: Fred M. Lege, Jr., chairman, of Dallas; Dave Grey, of Electra; T. E. McGlathery, of Dallas; O. H. Carlisle, of Houston, and J. H. Massie, of Dallas. Mr. Lege is chairman of the Texas state marketing committe, while the others are members of the marketing, refining and production committees.

"By adopting and following this procedure," Administrator Ickes said, "delay will be eliminated and prompt action may be taken against violators of the law.

"I feel that the majority of those engaged in the several branches of the industry in Texas are making an honest endeavor to comply with the provisions of the petroleum code and state and Federal regulations affecting production and movements in interstate commerce, but that there is a very small minority of violators who persist in making selfish attempts to destroy the entire petroleum industry by refusing to join with their neighbors and colleagues in co-operative efforts to prevent chaos.

"I am advised by reputable and responsible oil men from all factions in the industry—independents, minors and majors—that in Texas the basic opposition to the program for stabilization approved by the President and the oil industry comes from the ruthlessly selfish minority desirous only of gobbling up quick profits at the expense of fair minded, honest operators. This betrayal of the common welfare of an entire industry by an unprincipled minority cannot be tolerated, nor will it be.

"The authorization given by the Attorney General, at my request, will permit the speeding up of action in the courts to bring to task violators of the code and orders thereunder, whether they are engaged in producing, refining, transporting or marketing petroleum or any of its products.

"Marketing violations in one area encourage violations in another, as do violations of refining and transportation rules and regulations set up in the petroleum code and intended to permit an orderly and fair competitive existence."

Representatives Present

Among the representatives attending the meeting called for discussion of pooling and marketing agreements at the Carlton Hotel, January 24, were:

Atlantic Refining Co., John H. Stone,

(Continued on Page 32)

—Photo by Schutz, Washington, D. C.

Representatives of companies which signed the purchasing and marketing agreements in session at Washington

All Wilcox Sand Wells in Oklahoma City Field Nearing Mechanical Lift Stage of Production

By S. F. SHAW
Consulting Engineer, San Antonio, Tex.

With the formation pressures declining rapidly and water moving up-dip from the western boundary of the Wilcox zone in the Oklahoma City Field it would seem that, judged by the history of other fields, this great field is now entering into the pumping phase of production. The remaining natural flowing life of most wells is apparently short and to secure their allotted production it will be necessary to resort to artificial lifting methods very soon.

The initial pressure in the Wilcox zone was probably in the neighborhood of 2,600 pounds per square inch. The average reservoir pressure in the prolific north portion of the Wilcox zone, including Sections 2, 3, 10, 34 and 35, is now about 600 pounds per square inch, and the average pressure in the entire Wilcox zone, including Sections 22 and 26, which have been drilled within the past year or two, is probably not much above 700 pounds. The spacing in Section 22 has been very close, and the pressure decline has been rapid.

The writer made an estimate of ultimate recovery for the entire Oklahoma City Field at approximately 250,000,000,* bbls. of which recovery from the Wilcox sand was estimated at 175,000,000 bbls. With reported production from the Wilcox zone at about 107,000,000 bbls. to the end of 1933, and allowing a generous addition for "hot" oil that has been produced, and also considering that pressures have declined from 2,600 pounds to 700 pounds, it may seem doubtful whether this guess of 175,000,000 bbls. will be fulfilled.

As yet we do not know just how to interpret the exact relation between bottom hole pressure and recovery. It is possible that the production decline curve for this field may soon flatten and the recovery may exceed that which would appear to be the case by extrapolating such a curve at this time. At any rate, the major portion of the oil ultimately to be produced from the Wilcox sand appears to have been obtained whatever be the method of estimation employed at the present time.

The wells in the Wilcox zone are rapidly being placed on gas-lift since up to the present time this seems to be the only dependable method for handling from this great depth the large volume of fluid now necessary to be lifted, and that will need to be lifted later when water has entered the zone as a whole. There are indications that the percentage of water will gradually increase and costs of lifting will mount correspondingly until such time as it becomes unprofitable to produce the wells, after which they will have to be abandoned, or plugged back to the upper gas sands.

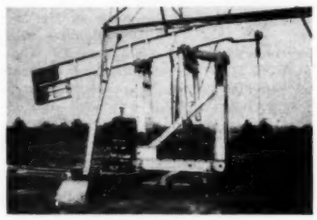
Flowing Pressures

There has been an impression that when the flowing pressure has declined to 300 pounds the gas-lift will become inoperative. As a matter of fact, there is no pressure, however low, at which the gas lift ceases to operate merely because of low pressure conditions. A condition could arise where the depth would be so great and the flow pipe so small that the friction set up by an excessive flow of gas through the flow pipe would become equal to the pressure at the face of the sand, or to the reservoir pressure, in which case there would be no flow of oil into the well. This condition probably will not be reached in the Oklahoma City Field until the pressure has declined to 25 or 50 pounds.

The more likely possibility is that of the quantity of gas required to lift the oil and water becoming so great that the cost of compressing the gas will amount to more than the value of the oil lifted. With oil at $1 per barrel such a condition will not be reached until the pressure has declined to some point between 25 and 50 pounds in the case of a well making clean pipe line oil, or 50 to 100 pounds in the case of a well making approximately 50 per cent water.

With few exceptions the smallest casing diameter employed in the Oklahoma City Field is 6⅝-inch O.D. and when the pressure has declined to 50 or 100 pounds sufficient fluid can be lifted through a casing of this diameter to make the operation profitable, until the percentage of water has become excessive. When such a point of excessive water content is reached, there is no method known that will handle the liquid at a profit from this depth. The experience in the Arbuckle zone of the Oklahoma City Field points toward this conclusion.

The writer once had occasion to lift water through a pipe approximately 1,100 feet in length in which the pressure at the lower end of the flow pipe was 3 pounds and under this condition the quantity lifted was over 500 bbls. per day. The pipe was tapered with top section of 10-inch diameter, and consumption of air was about 8,500 cubic feet per barrel. In the Little River Field a well 3,000 feet in depth was successfully produced with a bottom hole flowing pressure under 15 pounds per square inch, and in the Seminole area in wells of about 4,200 feet in depth oil was successfully lifted with bottom hole flowing pressure of 25 to 50 pounds per square inch.



Ten-foot stroke heavy duty pumping unit now being tried in Oklahoma City field. Manufactured by The Parkersburg Rig and Reel Co.

Oklahoma City Experience

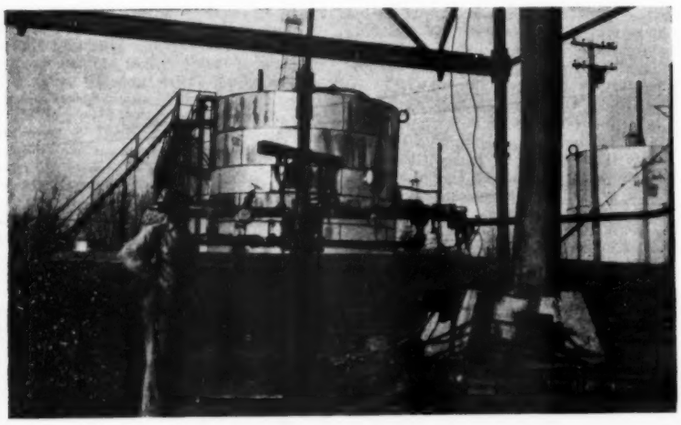
In the Oklahoma City Field the writer has already noted bottom hole pressures of about 250 pounds in wells producing 600 to 1,500 bbls. of fluid per day, of which the water content was about 40 to 60 per cent. The gas-lift under these conditions is quite profitable unless the cost of compressing the gas is exorbitantly high.

The water percentage along the west border of the Wilcox sand is increasing, and in a group of wells in this area it ranges from 17 to 60 per cent. In one well produced on gas lift the water was approximately 80 per cent of fluid lifted when the well was first started, but in the course of a few days the water declined to about 50 per cent, in a total production of 600 to 700 bbls. per day. In another well producing 1,500 bbls. per day on gas-lift, the water content after the first few days averaged about 60 per cent. In the case of a well that is still flowing naturally, but which had been shut down for several days, the water amounted to more than 25 per cent when the well was first opened but gradually declined to about 17 per cent water.

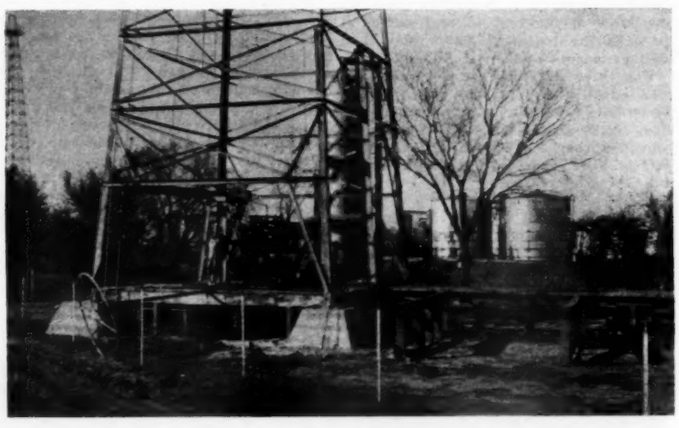
It would appear from these instances as if there is an accumulation of water produced from the well during the first few days after it has been closed in, the percentage of water gradually declining until the head of water has been worked off. In the course of time the percentage of water will again gradually increase as the sand becomes depleted of its oil content.

In the case of a few wells making considerable water on the pump it has been noted that pumping of almost clear water may continue for several hours after a well has been standing for a time, before the oil makes its appearance. Unless the lifting method has a capacity sufficiently great to work off this accumulation of water together with the additional water flowing into the well, it is conceivable that nothing but water could be produced owing to lack of lifting capacity.

A few wells in the Oklahoma City Field are being pumped on the beam though the volume of fluid handled is not large. Three wells have been equipped with the Hughes plunger-lift method. Two or three wells have been produced by the Reda submerged centrifugal pump, and in one case a production of more than 30 bbls. per hour was obtained. A well is to be equipped soon with a Sullivan pneumatic cylinder having a 10-foot stroke, and the outcome of this test will be of much interest.



Oklahoma City well hooked up for the Hughes plunger lift



One of the many Oklahoma City field Wilcox sand wells producing by the gas lift method. Wells cased with 7-inch O.D. casing and using 2½-inch tubing for flow string

Natural Flow Period Passing

The day of merely opening a valve to get whatever production is desired is about over in the Oklahoma City Field, and real lifting problems are beginning to confront the operators. The next 60 to 90 days will see a marked activity in equipping wells for artificial flow since by that time the pressures will have further declined to the point where few wells will flow their production naturally.

Conditions have reached the point in the Oklahoma City Field where it is rather late to begin experimenting, and

(Continued on Page 15)

*S. F. Shaw, "Changing Conditions in Oklahoma City Field Will Soon Necessitate Mechanical Lifting"; The Oil and Gas Journal, December 1, 1932.

Wide Scope of Wildcat Exploration in 1934 to Prepare for Future Crude Oil Requirements

By JAMES McINTYRE

Notwithstanding the potential production of crude oil in the United States is greater than present refinery demand for the product, oil companies in every oil-producing state are preparing for the future.

In the past few months more geophysical work has been done than at any time in the history of the business, and many structures have been discovered, which discoveries have been followed by leasing campaigns, preference having been given to blocking, rather than checkerboarding.

The following review of what may be expected in exploratory work in 1934 was written by The Oil and Gas Journal's correspondents, each covering his own territory. It is interesting in showing the wide scope of future wildcatting, which extends all the way from the Canadian line to the Gulf of Mexico, and from the Mississippi River to the Pacific Coast. It does not include work that may be done in Washington and Idaho in the Northwest, and Alabama and Florida in the Southeast, all four states being possibly oil bearing to a more or less extent.

Michigan will also be gone over by the wildcatter with more willingness than ever before, because of the discoveries of last year and early this year, which have brought that State up to a position of great importance among the oil-producing divisions of the country.

Wildcat counties and townships in Michigan in which new locations have been staked out, including a number of wells now drilling, include: Fort Gratiot and Clyde Townships, two each, and Greenwood Township, one, in St. Clair County, with single locations in the following counties and townships: Vassar Township in Tuscola County, Evart in Osceola County; Argyle in Sanilac County; Penn and Porter in Cass County; Jordan in Antrim County; Bruce in Macomb County; Oregon in Lapeer County; Gladwin in Gladwin County; Benton in Eaton County; Au Gres in Arenac County; Ecorse in Wayne County; and North Plains in Ionia County.

Oklahoma

It has been estimated that at the beginning of the year there were approximately 150 known undeveloped geophysical structures in Oklahoma scattered over 18 counties. The immediate future development will be on these structures. Their discovery is the result of a number of years of work with geophysical machines. The majority of these structures are located in the central western part of Oklahoma. In addition there are the structures that have been located by subsurface geology in western and southern Oklahoma and a few in the southeastern part of the State.

The areas that will be in the spotlight during the year include the region along the Nemaha buried mountain trend north and south from the Oklahoma City Field, passing through Logan, Garfield and Grant Counties. These will be deep prospects requiring a large investment.

East of the Oklahoma City Field, Lincoln and Payne Counties will be tested, and in the Greater Seminole area the hunt for extensions will continue, in Hughes, Seminole and Pottawatomie Counties.

The development of these promising structures will be mostly by the major oil companies as they have been prospecting with geophysical machines for several years and then following this by leasing all the desirable lands. In several instances part of the acreage was secured by individuals and smaller oil companies. This may speed the development in some cases.

On south from the Oklahoma City Field a number of interesting plays have been made following geophysical surveys. The areas that have been leased include parts of Cleveland, McClain, Garvin, Murray, Carter and Love Counties. This area extends entirely across the State to the Red River.

In southern Oklahoma developments are expected to continue in the vicinity of the Fitts Pool in Pontotoc County; the shallow area around Atoka, and in Stephens, Jefferson, Comanche, Cotton, and Tillman Counties.

The southwestern part of Oklahoma may experience activity as the result of proposed gas projects which have to do with natural gas lines from the Sayre Field, in Beckham County, to various communities in the central part of the State. Due to the lack of market most companies have been devoting most of their time to the discovery of oil fields, and gas reserves have been left to the future.

Future Work in Kansas

The majority of the large oil companies are maintaining a number of geophysical machines in the central and western part of Kansas to continue the search for oil. From present indications the year will see a sharp increase in work in the following areas: Along the trend south from Wichita, on what is called the Abilene arch to the state line in Sumner County; north of Wichita to McPherson County, where the largest of the recently opened pools in the State have been found, including Ritz-Canton, Voshell and Nikkell.

The development of the southern part of the State will be centered in Sumner County, where a number of blocks have already been taken. Several wildcat tests are expected to be started in a short time along this trend. At present the blocks are located near the region of Anson, Mayfield, Wellington, Caldwell and Milan.

The large territory in the central western part of the State will also receive its share of the wildcat play. The development of the present pools will require considerable drilling. These areas are scattered and there is plenty of room in the counties for other pools. The counties that are expected to receive a large part of the development include Rice, Reno, Kingman, Barton, Ellsworth, Harvey, Russell and Stafford.

Another interesting factor that will increase the development during the year is the building of pipe lines into the central western part of the State during the last half of last year and the first part of this year. These pipe lines now connect the counties of Russell, Ellsworth, Barton, Rice, Reno, Stafford and Kingman with the main pipe line systems of major purchasers. Previous to this time a number of these producing areas were shut in while others had a limited outlet by means of loading racks and tank cars, or trucks.

In Rice, Reno, Kingman, Stafford Russell and Ellsworth, a number of pools are now producing with only a few wells in each and these are expected to be further developed and extended.

Geophysical parties are doing considerable work in western Kansas and this may result in a number of wildcat tests. Oil and gas have been found in Rush, Trego, Ellis and Rooks, and as far west as Finney County. The Hugoton gas field, in the extreme southwestern part of the State has been quiet as an enormous gas supply has been developed there but it has little outlet under present conditions.

Gulf Coast's Big Prospect

Although the Gulf Coast district of Texas and Louisiana has been undergoing an intensive exploratory and wildcatting play for the past two years, it now seems probable that the development has only started and that what has been done has been only the groundwork for what is to come. There seems to be no question that the activity will be continued over a wide scope for several years.

That 1934 will set a new mark in drilling activity and exploration for additional petroleum reserves is indicated in the number of definite prospective areas of merit already in line for early development. These will supplement the recently discovered, as well as old fields, where, although production and the existence of structural or domal conditions have been proved, the potential reserves have not been exploited.

The higher prices which have been established for Gulf Coast crude have given an incentive to further exploration, and the accessibility of Gulf Coast fields to markets of the world and the possibilities for continued development have been a lure both to the wildcatter and the producer of crude. New high values which have been set both for coastal proven and wildcat acreage of merit have been added inducements for the search for prospective and potential oil territory in this district.

Starting the year off on the coast is the development getting under way in northwestern Liberty County where Gulf Production Co. late in 1933 brought in a wildcat producer on the Kirby Lumber Co. tract in the J. Pleasant Survey in the Cockfield at a total depth of 5,724 feet. That this district, now called the Cleveland Field, is to be an important producing area is the general assumption on the southern coast and it

Oklahoma City Will Be Host to A.P.I. Production Division on Feb. 15-16

The Mid-Continent Section, Division of Production of the American Petroleum Institute will hold the annual meeting at the Warner Theater, Oklahoma City, Okla., February 15 and 16. This is one of the important meetings of the A.P.I. Production Division, and was held last year in Wichita, Kans. It is anticipated that a large crowd will register at the booth provided for that purpose in the Biltmore Hotel between 8:30 and 10 a.m., February 15. The registration booth will be open during the two days of the meeting.

C. M. Mosier, city manager, Oklahoma City, will make the address of welcome at 10 a.m., February 15, with R. R. Hawkins, production superintendent, the Texas Co., Tulsa, and chairman of the Mid-Continent Division, in charge of the meeting. After the reports of the district chairman and district secretary, F. W. Floyd, Carter Oil Co., Tulsa, the technical papers will be presented.

In former meetings it has been observed that there has been a tendency for a smaller number to attend the second day's meeting. No particular reason has been assigned to this but it is hoped that the program for this year's meeting will be so important throughout that the attendance for both days will be large.

"Vocational Training" will be the subject of a paper to be presented at 10:30 Thursday morning by L. K. Covelle, state supervisor of vocational education, State Department of Education, Stillwater, Okla.; and he is followed by Earnest Boyce, professor, sanitary engineering, Kansas University, chief engineer board of health, State of Kansas, who will speak on "Salt Water Disposal."

After lunch, C. E. Reistle, Jr., chief engineer, East Texas Producers Association, Kilgore, Tex., begins the afternoon session at 2 o'clock, with a paper on "East Texas Production." H. F. Beadmore and H. O. Harder, petroleum engineers, Indian Territory Illuminating Oil Co., Oklahoma City, will discuss the "Possible Future Production Methods of the Oklahoma City Field," starting at 3 p.m. J. M. Hewgley, superintendent, oil production, Slick estate, Oklahoma City, and J. P. Stephens, district superintendent, Phillips Petroleum Co., Oklahoma City, will present a paper on "Reconditioning Wells in the Oklahoma City Field," at 4 p.m.

The Friday technical session will start at 9:30 a.m. with a paper on "Repressuring" by J. O. Lewis, Dunn & Lewis, Tulsa. "Allocation of Production" by Fred Wood, chief petroleum engineer, Standard Oil Co. (Indiana), Chicago, will follow, and the morning meeting will close with a demonstration of the laboratory models of producing formations furnished through the courtesy of the Humble Oil & Refining Co., Houston.

Baird H. Markham, director of American Petroleum Industries Committee of American Petroleum Institute, will open the afternoon session with a paper entitled "Taxation — Responsibility or Menace." J. D. Collett, general chairman, Regional Planning and Co-ordination Committee, Region No. 4, will speak on "The National Petroleum Code."

A report of nominating committee and election of officers for the production division for the year will close the meeting. A banquet will be served at 8 p.m. Friday at the Biltmore Hotel through the courtesy of the Oklahoma City A.P.I. chapter.

The general committee in charge of arrangements for the details of this meeting is composed of C. O. Rison, chairman, Indian Territory Illuminating Oil Co.; J. M. Hewgley, T. B. Slick Estate; J. M. Hull, Chamber of Commerce, and J. P. Stephens, Phillips Petroleum Co., all of Oklahoma City. The retiring officers of the Mid-Continent district are R. R. Hawkins, chairman, The Texas Co., Tulsa; H. L. McQuiston, Phillips Petroleum Co., Oklahoma City, and B. O. Hindman, Indian Territory Illuminating Oil Co., Seminole, Okla., vice chairmen, and F. W. Floyd, secretary, Carter Oil Co., Tulsa.

now is perhaps the "hottest" play on the coast. The Gulf company is starting up two additional tests at once and has location for a third. Two miles southwest, Brown & Wheeler are starting a well, while the same operators have another test 6 miles south of the Gulf's well. Seven miles west of the discovery well, in Montgomery County, Steen Drilling Co. is starting still another.

The influence of the Gulf Production Co.'s discovery is expected to be felt throughout northern Liberty County and southeastern Montgomery which is expected to be a center of wildcat drilling for several months, at least until the extent of the new field is determined. That district for some time has been in the midst of an active leasing play and now is pretty well blocked from one end to the other although there always are holes and other open acreage to figure in lease trading plays.

Southern Polk County, where Dick Schwab recently opened what appears to be another field, also is expected to attract considerable new drilling. Across this district, taking in northern Liberty County, southern San Jacinto County, southern Polk County, there are numerous favorable areas which have been held tight waiting an opportune time for drilling.

The Conroe Trend

All along the so-called "Conroe Trend," not only eastward but also westward through Waller, Grimes and down through Colorado County, drilling of a number of promising areas has awaited the opening of 1934. The Tomball district of northern Harris and southern Montgomery Counties also offers opportunities for important extension drilling. There a field of wide extent is being proved up despite the fact that, due to poor sand conditions, the productive possibilities have been disappointing so far. Extension tests now are being started both over a mile to the northwest of the field and also to the extreme east with indications that production might extend into the townsite of Tomball, which would occasion an even more active drilling program.

Lower Coastal District

The lower coastal district is expected to be the scene of much drilling activity and possibly additional leasing play. On the horizon at this time is the Coletto Creek area of western Victoria County. Although the results of development so far at Coletto Creek have been more or less uncertain, yet the area is recognized as having important possibilities. A number of sands are open for exploration, and while most of these have shown largely gas, yet the existence of oil has been proved. Two wet gas wells have been completed to date from a 4,400-foot horizon and one of these lately has been making some oil. While there is only one rig active at this time, several other tests are due to be started within the next 30 days within a radius of a couple of miles.

This area is located along that trend of field extending from White Point and Saxet through Refugio, Fox, Greta, O'Connor-McFaddin and Keeran. It generally is believed that there are many other productive spots along this trend and no doubt considerable additional effort and time will be spent during 1934 in exploration work along it. The Greta Field, opened during 1933 and which has been developed into major proportions, still is open for considerable new drilling, not only in its present main producing horizon at 4,400 feet but also in exploration in the numerous other sands which have been encountered but which as yet have not been taken in. The discovery of production in one well drilled to a 5,900-foot sand on the south side of the field has indicated the possibility of this sand underlying the entire field and so far no wells in the field have been carried below 4,400 feet.

While the Bonnie View district south of Refugio has not turned out anything as yet, it is one of the prospective areas along the trend and still is under drilling development.

In South Louisiana

In the South Louisiana portion of the Gulf Coast, increased wildcatting along the "Conroe Trend" into Mississippi is due to get under way this year. Millions of acres of land in a strip following east and west across the State along the inland margin of the salt dome district have been placed under lease within the past two years and for the most part all this is virgin territory to the drill. Since the first of the year, Humble Oil & Refining Co. has made location for its first test along the Louisiana section of the "trend," this being located in the Dry Creek area in the extreme eastern portion of Beauregard Parish.

In the salt dome district, both of Texas and Louisiana, geophysical exploration, which has been carried on actively, has indicated the existence of a number of additional salt dome prospects which are slated for early drilling. There also are several score of older prospects of considerable merit which so far have not been touched with the drill or which have received only limited exploration.

In East Central Texas

A territory, which so far has been very little prospected as far as drilling is concerned, but which is expected to receive considerable attention during the next few months is that which adjoins the Texas Gulf Coast district to the north. The recent discoveries at Long Lake in Anderson County and at Buffalo in Leon County have stimulated interest in that group of counties, including Houston, Madison, Grimes and down through Brazos County. An extensive wildcatting program is scheduled to get under way in all these counties. In Brazos County, a wildcat started by Floyd Scott and associates on the Kurten prospect, has created much interest as a result of gas showings in the Carrizo and it is possible a well can be completed in sand around 1,400 feet, opening a new field, but for the present the hole is to be carried on down for a test of the Wilcox.

Summing up the potential wildcat development for 1934 on the Gulf Coast it might be stated that there is hardly a part of this entire big district which is not under the watchful eye of the many companies and operators which have been here from the beginning and those which have been coming in and which continually are spreading out their operations and holdings there.

Southwest Texas

Unless some wildcatter brings in a good well in a new territory so as to start a new line of activity there seems no reason for believing that wildcatting in the year 1934 in Southwest Texas will get very far away from the lines it was following at the close of 1933. The most popular territory at that time was in northern Duval and southern McMullen Counties in the Government Wells trend, which was really the only particularly active spot.

One of the surprises last year was the absence of wildcatting along the Jackson trend between the Government Wells area on the southwest and the Conroe area on the northeast.

This Jackson trend seems sure to come into its own some day, and it comprises a territory about 200 miles long, from the Government Wells district northeast to Conroe. Failure of the operators to meet with success in getting additional producers in southern Colorado at the northeast end of the Jackson trend may have slowed operations during the past year and success of the Dash Production Co. late in 1933 in getting a good well in wildcat territory in northern Bee County, No. 1 Ruhman, and also the McLain No. 1 Weiss, also in Bee County, a wildcat tamed into a gas well spraying oil, late in the year, if followed by completion of additional good producers will certainly draw attention back to this Jackson trend.

Deep Tests in West Texas

The Humble Oil & Refining Co. is drilling an Ordovician test on a block of acreage about 9 miles west of the Yates Pool, Pecos County. This test is down below 7,400 feet. It has had some good showings of oil and gas at a lesser depth, but the company is carrying it on down in quest of deep production. It should be completed within the next month or two.

The Gulf Production Co.'s No. 103 McElroy, located on its McElroy block near the Crane-Upton County line but in Upton County, Section 197, Block F, is another interesting Ordovician test drilling. It is down below 8,600 feet.

Atkins Brothers started an Ordovician test on the Reed ranch in the Mason and Perry Subdivision No. 39, near the town of Carlsbad, in Tom Green County, but the test has been slow in drilling and has been stricken from the drilling reports as temporarily abandoned.

The Humble Oil & Refining Co. leased a block of over 157,000 acres in eastern Reagan and western Irion Counties on the Sawyer Cattle Co. ranch, taking only deep rights for drilling an Ordovician test in the future. Dry holes have been drilled in this area to the Permian lime but a deep test will be most interesting.

Companies have leased considerable acreage in southern Scurry and in Mitchell Counties, presumably on the strength of a future Ordovician test.

The high gravity oil produced from the Ordovician lime in the Big Lake Field, Reagan County, has led companies to seek this production in other areas in the district, and has been the incentive for leasing other blocks in the district for drilling deep wells, and many deep wells will be put down in the basin in later years, with several expected to be drilled in 1934 if no other pools of major importance are discovered within the State.

A wildcat test is slated for Ector County in which five different pools have been discovered, one of which, however, can hardly be called a pool. This is the old Cosden Pool south of Judkins and a short distance to the southwest of the Penn Pool.

Several blocks throughout the Permian Basin, but principally in Gaines, Andrews, Ector and Crane Counties, will have to be drilled this year as the leases expire on the blocks and the companies will not relinquish them without first putting down at least one test on each block. These requirements will force the drilling of at least 35 wildcats in the district during the year.

Some drilling is also expected on a trend in Winkler County running from the northern part of the county near the Scarborough Pool, on a line with the tests drilled by Brashara to the east of the Hendricks Pool, and on south to the O'Brien area. Geologists are known to be checking this sector very closely which will no doubt result in some future tests on the strength of their reports.

Central Texas

The Danciger Oil & Refining Co. is drilling a wildcat test on a 15,000-acre block near Chico in Wise County, one of the first tests to be drilled in this county in a long time. It is not of exceptional interest but will either prove or condemn another area for the district. The Sinclair Prairie Oil Co. is interested in the test.

Western Shackelford County is to be tested in 1934, blocks having already been taken, and others being assembled in that area. A test is preparing to be drilled in Section 3, T.&N.O. Survey, 2 miles south of the Bluff Creek Pool by Callahan & Oyster of Abilene. This test is located on a 1,000-acre block and will seek production in the Stray or upper Cook sand and may be drilled on deeper to the King sand.

The Anzac Oil Corp. is drilling a test in southwestern Callahan County and will give a good picture of the area when it is completed. Several Ellenburger tests have been drilled in this area, getting good showings in that deep horizon, but water breaking in and drowning them.

Panhandle District

One large wildcat block which is being tested in the Texas Panhandle is made up of 50,000 acres, in Section 2, Block 2, B.&B. Survey, approximately 8½ miles northwest of Dalhart, in Dallam County.

North Louisiana

Wildcatting in Louisiana should show a decided increase this year, particularly on the Sabine uplift in northwestern Louisiana and on the Conroe-Jackson trend in South Central Louisiana. Due to the latter structure running eastward out of the State into Mississippi, the latter district should also continue to be active.

Due to the increased geophysical work being carried on in North Louisiana in the vicinity of known salt domes, that district is destined to experience its most active period in several years. The Gulf Refining Co. and others, that have worked out geophysical highs during the past few months will continue operations on these blocks for an indefinite period and to indefinite depths. In the southern part of Nachitoches and Sabine Parishes, large blocks have been assembled with definitely good geological reports. This area, lying between the Conroe-Jackson trend and the structures of the Sabine uplift to the north, have been looked upon for the past few years as good wildcat territory. Drilling for Trinity sand on known structures will continue, although it is fast becoming a belief among oil operators that the depths to pick up the lower pay will be from 6,000 to 8,000 feet.

It is reported that one major company is leasing considerable acreage in the old Shongaloo gas district in the northern part of Webster, and lying midway between the Haynesville and Cotton Valley Fields. Many operators have their eyes on the latter area, which furnished the best saturated oil core from the lower Trinity, 7,000-foot level, in a well drilled several years ago.

Due to the great expense of drilling these wells, the operators may wait for better price conditions of crude, but the tendency at this time is to build for the future by taking straight commercial leases for 5 to 10 years, or to buy the land in fee.

A large part of the acreage on the Conroe-Jackson trend in South Central Louisiana was taken up on long time

(Continued on Page 37)

SUMMARY OF STATEMENTS RELATING TO BUSINESS OF VARIOUS PIPE LINES FOR MONTH ENDING DECEMBER 31, 1933

	Gross stocks	Runs from wells	Other receipts	Regular deliveries	Other deliveries
Nat. Transit	364,935.28	248,595.53	738,891.23	494,085.74	522,461.71
S. W. Pennsylvania P. L.	392,076.27	67,264.40	831,149.23	453,437.68	394,634.45
Eureka P. L.	598,113.48	259,595.97	297,343.25	174,489.25	276,600.80
Buckeye P. L. (Mackaburg)	360,524.46	227,615.69	121,729.23	254,820.05	106,048.10
Buckeye P. L. (Lima, etc.)	2,611,210.72	56,547.64	2,161,076.85	1,149,143.72	880,695.04
Buckeye P. L. (Cleveland)	41,820.28	8,841.81	178,049.27	1,212.68	186,681.81
Indiana P. L.	464,104.05	.....	1,236,686.01	806,448.92	421,027.39
Pure Oil Co.	747,934.27	705,520.27	24,723.19	638,573.54	.....
Southern P. L.	149,822.09	.....	114,658.44	24,723.19	42,558.03
Bradford Trans.	273,754.04	414,710.68	.....	357,618.31	.....
N. Y. Transit	82,589.79	33,470.46	150,501.98	199,748.15	.....
Northern P. L.	168,295.64	.....	408,377.67	79,964.94	326,282.46
Tide Water P. L.	772,338.22	21,592.66	.....	311,792.83	.....
Tuscarora Dev.	5,845.19	.....	.....	349,483.55	.....
Valvoline P. L.	127,177.39	75,610.20	.....	45,673.75	39,637.76
Other companies	105,856.17	291,701.97	2,134.15	194,173.01	.....
Total December 31	7,466,397.24	2,410,967.28	6,365,318.55	5,545,389.31	3,187,627.55
Total November 30	7,134,944.81	2,561,734.48	6,457,638.85	6,223,001.91	3,119,579.98
Difference	331,452.53	150,767.20	92,320.30	677,612.60	68,047.57

First Drilling Program at Conroe Field Is Nearing End in Systematic but Rapid Development

By NEIL WILLIAMS
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., Jan. 15.—Operators at Conroe now are engaged in winding up the drilling program for the field. By late February or early March, if the present rate of work continues, development for the time being will have been finished. Then, the only remaining concern will be that of production and maintenance of systematic withdrawals and conservation of the petroleum reserve. As of January 1, there were 689 oil wells and 7 gassers producing in the field. Based on units of production in which the field is divided for proration purposes, the oil wells represented a total of 13,309 producing acres. It is reliably estimated that the field, when entirely drilled, will cover 17,781 acres. While this leaves 4,472 acres yet to be drilled, or the equivalent of approximately 220 wells based on 20-acre units, it is not believed that more than 60 to 75 wells additional will be drilled at this time, or a total of about 750 wells for the field.

That all the remaining acreage classed as potentially productive will not be drilled at this time is likely in view of the fact that most of it is around the sides of the field, principally along the west, southwest and some on the south, where only the upper Cockfield sand offers possibilities for further development. The sand is very much thinner than the main Conroe sand, and not as productive, having an estimated recovery of only 10,000 to 15,000 bbls. per acre. Considering the 5,100-foot depth and the long payoff of this production under proration, there is no particular desire on the part of the operators to develop this now, and, as this remaining acreage is in sizable leases held by the larger interests, it no doubt will be held as long as possible and may never be drilled in units anywhere nearly as small as 20 acres.

Main Sand Drilled Up

The main Conroe sand is virtually all drilled up. There are a few locations left on the inside of several of the larger tracts and these are now being filled in. Smaller tracts and all offsets are entirely taken care of. The productive limits of this sand have been defined on all sides. The upper Cockfield sand, which overlies the main Conroe sand and which is productive of oil downdip around the fringes of the field, also has been fairly well determined along the east, southeast and south sides. As previously stated there is some room on the west and southwest for extension of production in this sand. Over the main part of the field and on the other sides to the north, northeast and northwest the sand has been productive only of gas.

Due to the overlapping of productive areas of the two sands around the edges, it generally has been difficult to determine in which sand some of the wells have been completed. It has been indicated that the two sands are in direct communication at several places due to faulting and that both possibly are fed from a common reservoir. Seventeen wells scattered along the southeast, south, southwest and west sides have been fairly definitely established as upper Cockfield sand producers. That another 15 to 25 wells also are in that sand is probable. However, as far as proration is concerned, production from both sands is on the same basis.

Considering the size of the field, the varied lease ownerships and the numerous different operators that have figured in the activity, Conroe has been one of the most systematically drilled and orderly produced fields on record. Early in the life of the field a 20-acre spacing was inaugurated and only in necessary instances has this program been violated. Indicative of this is the fact that of the 689 wells to date, 624 are on 20-acre units, leaving only 66 on tracts of less than 20 acres. Of the latter, 11 are on 19-acre units, 1 on an 18-acre unit, 5 on 17-acre units, 3 on 16-acre units, 8 on 15-acre units, 4 on 14-acre units, 2 on 13-acre units, 5 on 12-acre units, 1 on an 11-acre unit, 14 on 10-acre units, and only 11 on tracts of less than 10 acres.

Systematic Development

This systematic program of development facilitated a consistent, yet fairly rapid, drilling and proving up of the field. It was the practice of some operating companies, particularly on the larger tracts, to plot all their acreage into units as nearly uniform as possible, make all their locations and lay all water and fuel lines in advance of the start of operations. Then, with this setup it was possible to drill the locations and develop the lease in such order as to provide the utmost efficiency in economy of time and effort.

The Conroe Field was opened two years ago December 13. However, it was not until autumn and early winter of 1932 that drilling activity got into full swing and it can be stated that the bulk of development took place during 1933. This is attested by the fact that on January 1, 1933, there were fewer than 100 producing wells with the field a year old, leaving nearly 600 wells drilled and completed the past year alone.

Drilling of Conroe was unusually slow to get under way. Until long after George W. Strake brought in the discovery well few oil men had any confidence in the area, let alone any idea that the field was destined to become the third largest in the United States. The Cockfield horizon, in which the first well was completed, was something comparatively new to development, Pettus previously having been the only production in it and that field had been disappointing. In fact no Eocene field of any kind had ever been entirely satisfactory. The Strake well in itself was only a wet gasser and was looked upon generally only as a freak and perhaps typical of the discovery of certain other Eocene fields in which subsequent development revealed extremely spotted conditions productive largely of gas only.

Completed well at Conroe. Characteristic of the field is the fact that all derricks are removed after completion of wells and it is possible for a stranger to travel through the heart of the field without knowing he were in an oil field

Discovery Well

The second well, which was spudded in during January, 1932, by Herman F. Heep, was not completed until April 11, 1932. This well, 1½ miles northeast of the Strake well, also turned out a wet gasser, and as such did not initiate any particular activity. The next well drilled, and which turned out to be the discovery oil well, was not brought in until June, 1932. This well was put down by Strake Oil Corp., with the assistance of the Humble Oil & Refining Co., which company Mr. Strake had persuaded with much effort to back him in a development program to prove his acreage as productive of oil.

Even after the bringing in of that oil well, which was followed in a few days by another oil well, drilled by Herman Heep, 2 miles to the east, there was no immediate rush of drilling activity. It was September before there was any development on a large scale. From then, however, the boom was on, and operators began moving in rigs by the wholesale. In November, 1932, there were 55 completed wells. This was swelled to 89 producers by the close of the year. On the latter date there were 60 rigs actually running with 92 locations being prepared for drilling.

The peak of operations was reached during January, February and March of 1933 when there were between 90 and 100 rigs actually running most of the time. By the volume of work which was being done and the rate of completions during March, the field was scheduled to be completely drilled up by October or November of that year, which would have made it the most rapidly drilled up field of its size in history. However, late in March a number of the larger companies with sizable acreage remaining to be drilled voluntarily agreed to cut the number of rigs they had running 50 per cent. This was done gradually as fast as contracted wells were completed, and with most of the smaller tracts already having been drilled their quotas, work in the field dropped off to around 40 rigs, which number has been running fairly constant since then.

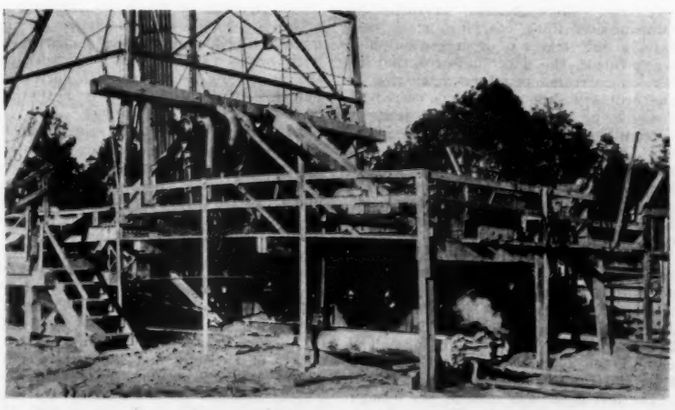
Third Largest Field

Today, with its drilling program virtually completed, Conroe stands not only as the third largest field in the United States but also as one of the most desirable and outstanding in every other way. Values established for proven acreage and production have set a precedent and a record, which has been reflected in a generally higher standard of worth of Gulf Coast properties, both wildcat and proven. Prices as high as $7,700 per acre have been paid recently for producing properties at Conroe. This price has been exceeded in isolated instances in certain fields but such trades generally have been influenced by peculiar circumstances rather than actual worth of the acreage in itself.

Conroe producing properties have been constantly in demand by certain of the larger companies, which steadily have been increasing their holdings by purchases from the smaller operators. Since October, a total of more than $10,000,000 has been paid in purchases, the largest of which was that in which the Humble Oil & Refining Co. acquired from Gulf Coast Drilling & Producing Co., McAlbert Production Co. and A. & P. Oil Co. a total of a little over 650 acres in the A. Steele Survey and 18 producing wells for a total consideration of $5,200,000. Humble also recently purchased the holdings of C. C. Steinberger, including a full interest in one 35-acre lease with two wells and a half interest of a 50-acre lease and a 27-acre lease, each having three wells. This involved a total of $568,000 including a reimbursement of drilling costs based on $27,000 per well.

Humble is the largest operator in the field, having a total of 283 wells on the last report. This does not include wells in which it is only a part owner. Tide

(Continued on Page 29)



Type of drilling rig used in Conroe Field

Investigators Conclude Oiliness of Lubricants Is Due to the Presence of Protopetrolatum

By C. A. WARDNER
W. H. Daugherty & Son Refining Co.

The presence of a vital constituent in Pennsylvania Grade lubricants was suggested by studies of the composition of petrolatum. As a manufacturer of petrolatum, this refinery has had special occasion to make a study of the physical and chemical properties of this product. It is a definitely established fact that petrolatum is a mixture of solid and liquid hydrocarbons. In the critical examination of such a product, no definite crystal structure is observed, but an amorphous condition prevails throughout the entire mass. Wax distillate is likewise a mixture of solid and liquid hydrocarbons, but of a different nature since here the solid wax forms crystalline aggregates.

Why should two such petroleum products, which seem very similar, behave so differently? A hypothesis that petrolatum is a colloidal system in which the solid wax is the external phase and the oil is the internal phase was advanced by F. W. Breth and G. A. Kessler to explain this difference. In other words, the wax adsorbs or imbibes oil, as gelatin does water, causing the formation of a swollen jelly-like mass. This hypothesis is substantiated by the fact that petrolatum will not leave an oily spot on paper, showing that the wax is the external phase. For a system to form in this manner and not remain like wax distillate, a third component is necessary. This substance acts as a pectizer or gel-former. The fact that artificial petrolatum will eventually exhibit a crystalline structure points to the presence of a third component in natural petrolatum.

Method of Isolation Found

The above mentioned researchers were engaged for a long time in finding a suitable method for the isolation of these three components. They found that acetone served very well for this purpose and the extraction of petrolatum with this solvent yielded the desired products, namely, an acetone-soluble wax distillate-like product which was readily separated into wax and oil, and an acetone-insoluble residue. This residue was a very viscous, unctuous material having a consistency similar to that of honey and consisted of hydrocarbons of high molecular weight. It was termed "protopetrolatum" and assigned the role of pectizer in petrolatum structure.

Pennsylvania long residuum yields petrolatum and lubricating oil. It therefore would be reasonable to expect that a portion of the "proto" substance would also be present in the lubricating oil fraction. This was found to be true by the application of the same extraction method to this fraction. A wax-oil mixture soluble in the solvent and a residue which was insoluble were obtained. This residue was also very viscous and corresponded in behavior to the previously isolated protopetrolatum, but for clarity in differentiation, it was designated as "proto-oil" to show that it was derived from the lubricating oil fraction.

The discovery of this material immediately prompted speculations as to its role in Pennsylvania oils. Does the inherent property of a Pennsylvania oil as a superior lubricant have any relation to the "proto-oil" content? Are proto-oils directly related to the "oiliness" of an oil? If so, then a lubricating oil can be considered as a liquid comprising an inert solvent or carrier (the oil) and the lubricant or "oiliness" imparting substance (the proto-oils). In other words, the proto-oils prevent metal-to-metal contact during operation, while the inert oil serves as a diluent in removing and supplying the active constituent to the proper surfaces.

Hypothesis Confirmed

Subsequent investigations have confirmed the hypothesis that these proto-oils are responsible for the oiliness of Pennsylvania lubricating oils. These tests were made on the Stephens consistometer which measures the temperature at which an oil fails to lubricate or when its internal resistance becomes zero. The temperature at which this occurs is referred to as the transition point of the oil.

The lubricating oil which contains the higher per cent of proto-oil invariably gives the higher transition point on the consistometer. Consequently, comparison of oils possessing the same viscosity at 210° F. shows that a Pennsylvania Grade normally dewaxed oil has a higher transition point than either a Pennsylvania Grade excessively dewaxed or a western oil, these two giving identical values.

The difference in behavior of a normal and an excessively dewaxed Pennsylvania Grade oil brings into consideration the sensitiveness of the proto-oils to modern refinery methods. The necessity for an adequate and careful control of each process becomes of greatest importance in the conservation of these compounds. Their partial solubility in naphtha solution at the low chilling temperatures will invariably precipitate a considerable quantity of them during dewaxing as established by the acetone-insoluble protopetrolatum. What will happen during an excessive dewaxing by the same method can readily be visualized. Likewise, other processes such as excessive filtration through fuller's earth, or sulphuric acid treatment, both of which are very severe in removing and destroying the proto-oils, will reduce the lubricating qualities of an oil. However, the absence of asphalt and resinous bodies in Pennsylvania Grade oils makes acid treatment unnecessary and the filtration required is moderate.

Cannot Be Distilled

It must be kept in mind that the nature of proto-oils is such that they cannot be distilled, cracking and decomposition taking preference over vaporization. Hence, atmospherically distilled overhead oils are completely void of this substance. The successful Pennsylvania refinery practice of blending distilled neutrals and the residual fraction to produce lubricating oils of high quality is therefore convincing evidence for the theory that the lighter neutral acts as a solvent for the heavier residual part which contains the proto-oils, the actual lubricating compound. However, according to our opinion, the long residuum method is preferable to the blending method if full content of the proto-oils in the stock is to be retained.

Emphasis must be placed upon the ideal constitution of a Pennsylvania Grade oil. Its general makeup is such as to make drastic refinement unnecessary with a consequent assurance of retaining the viscous compounds or proto-oils which contribute the "oiliness."

Oiliness in Lubricants Explained

Certain characteristics of petrolatum observed by F. W. Breth and G. A. Kessler led these investigators to advance a hypothesis that petrolatum is a colloidal system in which the solid wax is the external phase and the oil is the internal phase, with a third component accounting for the formation of such a system. This component acts as a pectizer. Isolation of the three components of petrolatum with acetone by Breth and Kessler revealed a material having the consistency of honey and this was termed "protopetrolatum" and assigned the role of pectizer. This high molecular weight material was similarly extracted from long residuum. The investigators then set out to discover the function of this "proto" material in lubrication, and their conclusion is that this substance contributes the "oily" characteristics exclusively.

Bureau of Mines Releases a Publication on Hydrogen Sulphide Corrosion

A newly recognized type of corrosion in natural gas transmission lines where only traces of hydrogen sulphide are present (12 grains or less per 100 cubic feet) has been studied and reported upon by the U. S. Bureau of Mines.

As a part of this work, bureau engineers have had under observation a transmission line operating at an average pressure of 300 pounds per square inch, transporting gas that contained 2 grains or less of hydrogen sulphide per 1,000 cubic feet. Within the last few years several failures have occurred in this line; brought about by the gradual thinning of the walls of the pipe to the point of failure. Reductions of wall thickness, if permitted to continue unobserved with no corrective measures taken before the strength of the metal is reduced below the point of rupture, are likely to be both costly and hazardous, as failure may occur without warning and with explosive violence.

After a number of practical field inspections were made by Bureau of Mines engineers, where internal corrosion of transmission lines carrying gases containing only traces of hydrogen sulphide was evident, the data indicated that no serious corrosion could be attributed to the ordinary type of gaseous corrosion. Instead, at seriously corroded areas a perceptible and even considerable quantity of water existed upon the metallic surface during corrosion. The bureau has designated corrosion in which the subject surface is covered with a sensible film of water by the term "modified gaseous corrosion."

The work of the Bureau of Mines on modified gaseous corrosion has been reported in Technical Paper 560, entitled "Corrosion of Steel by Gases Containing Traces of Hydrogen Sulphide; Effect of Pressure and Moisture Conditions." The authors are John M. Devine, C. J. Wilhelm and Ludwig Schmidt.

The test apparatus used by the bureau engineers is quite simple. The specimens are arranged so that a different gas pressure exists for each specimen. In order to obtain the conditions necessary for modified gaseous corrosion, each specimen is inclosed in a small tight-fitting muslin sack and thoroughly wetted. This provides the necessary film of moisture on the subject surface.

Data were obtained on the effect on the corrosion reaction of (1) pressure, (2) humidity conditions, and (3) hydrogen sulphide content of the gas. In studying the humidity relations it was found that in some of the tests the specimens were dry at the end of the test. This condition has been referred to as "variant humidity conditions."

The general results of the study of modified gaseous corrosion as made by the Bureau of Mines are summarized as follows:

Traces of hydrogen sulphide in a gas may cause severe corrosion if oxygen and water are present. Modified gaseous corrosion in which precipitated water is present on the surface of the metal is much more severe than ordinary gaseous corrosion in which no precipitated water is present on the surface of the metal, although the gas may be saturated with water vapor. Pressure accelerates the action in both forms of corrosion, but this effect is particularly noticeable in modified gaseous corrosion.

In natural gas pipe line systems, modified gaseous corrosion is the chief consideration in combating corrosion caused by gas containing traces of hydrogen sulphide. Steps that may be taken to reduce corrosion losses in pipe line systems include: (1) Removal of hydrogen sulphide from the gas, (2) reduction of oxygen content of the gas, and (3) control of humidity condition.

Copies of Bureau of Mines Technical Paper 560, "Corrosion of Steel by Gases Containing Traces of Hydrogen Sulphide; Effect of Pressure and Moisture Conditions," may be obtained only from the Superintendent of Documents, Government Printing Office, Washington, D. C., price 5 cents. Stamps are not accepted.

MOTOR TRANSPORT ELECTION

At the annual meeting of the Petroleum Motor Transport Association of Oklahoma, held in Tulsa on the evening of January 26, C. E. Jackson, Mid-Continent Oil Co., Tulsa, was elected president. The other officers elected are: W. K. Acheson, Pure Oil Co., Tulsa, first vice president; F. P. Nopper, Gypsy Oil Co., Tulsa, second vice president and L. E. Shroeder, Mid-Continent Oil Co., Tulsa, secretary-treasurer. The new directors are: C. L. Bowman, Shell Petroleum Corp. and Charles Earle, Sinclair Prairie Oil Co., Tulsa, and G. W. Wheatley, Empire Oil & Gas Co., Bartlesville, Okla.

Reports were presented by the retiring officers and duly approved and accepted and plans laid for an active year with several committees appointed to investigate and report upon various details in which the association is interested.

Effect of Oxidation and Type of Blend Upon the Lubricating Value of Some Petroleum Oils

By R. O. KING*

Mineral oils are generally blended to obtain specified viscosities at two temperatures, 70° F. and 140° F., for example. Blends are constituted therefore on the assumption that the oil will be used under conditions which permit the oil to maintain a complete fluid film; the separation of the lubricated surfaces, friction and the prevention of wear being dependent upon the viscosity of the oil, relative motion of the surfaces and mechanical design, all of which are physical factors. It is well known, however, that in conditions leading to a reduction of film thickness to molecular dimensions, friction and wear are dependent also on an intangible property described generally as "oiliness" possessed by some oils in an exceptional degree. The nature of the lubricating value thus described somewhat unsatisfactorily has become apparent as a result of recent investigations. Hardy[1], for example, shows that the partial removal of the active (polar) molecules which adhere to surfaces and can, therefore, be removed by passing the oil over clean glass beads or silica chips, decreases lubricating value. A further significant feature is that the residual oil if allowed to stand for a few days at room temperature recovers some of its lubricating value in contact with air, but not if in contact with nitrogen. It appears, therefore, that oiliness or lubricating value depends on the presence in the oil of molecules able to attach themselves firmly to a surface or on the formation of such molecules as active products of oxidation, and that Hardy's experimental methods sufficed to demonstrate the latter effect even at temperatures so low that little oxidation activity would be expected. Gilson's experiments with an unloaded and relatively thick oil film subjected to an extremely high rate of shear at temperatures of about 200° C. in an oxidizing, and then in a neutral atmosphere, suggested[2] that "the act of lubrication is simply the act of oxidizing the oil." Experiments[3,4] made more recently, but with loaded oil films, run in conditions promoting great oxidation activity extend the results mentioned to show that an unexplored region of high temperature lubrication exists which is dependent on oxidation activity, and on viscosity only in so far as that property may be required as a bridge to reach it. The special lubricating value found to accompany oxidation activity is described hereafter as "oxidation lubrication." The results of the recent experiments are summarized graphically by Figure 1. The region of nearly complete fluid friction in which the effect increases with the increase of viscosity due to oxidation will be seen to extend to a temperature of 50° C. only. Given sufficiently true surfaces and a suitable degree of viscosity, the oil film may remain unbroken as it diminishes in thickness with rise of temperature, load remaining constant, and seizure postponed until a temperature of about 160° C. is reached. The stimulation of oxidation activity in the oil then imparts special lubricating value or oiliness to the oil and leads to the region of high temperature lubrication extending to over 300° C. in which friction is extremely low, minimum coefficients of the order of 0.00045 being observed. The oxidation activity required to attain the region of high temperature lubrication leads to the formation of products tending to increase viscosity and therefore fluid friction. The decrease of friction obtained experimentally cannot then have occurred in a fluid film, but must be due to the development of oxidized substance as one constituent, even in small proportion, becomes a suitable medium for autoxidation processes producing activated molecules capable of improving lubricating value, at lower temperatures than would be possible otherwise. Thus a rational basis is obtained for the common belief that blended mineral oils are generally better lubricants than single varieties having the same physical properties. An explanation is also obtained for the variation of the lubricating values of blends having similar physical properties when made up of dissimilar constituents.

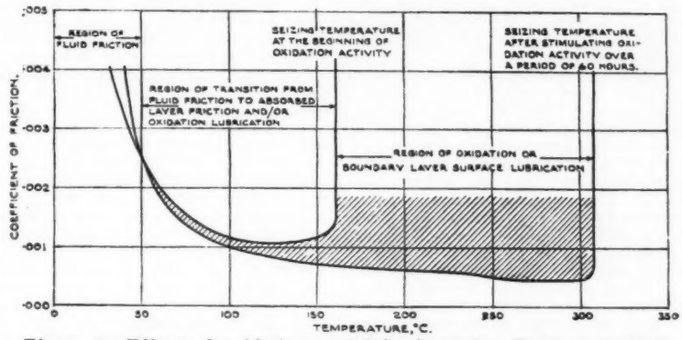


Figure 1.—Effect of oxidation on lubricating value. Load on journal bearing 1000-lb. per sq. in. of projected area. Air at 160° C. blown into circulated 2-gal. test sample of oil: surface speed 11.3 ft. per second

friction reducing boundary conditions. The total oil film thickness, excluding the adsorbed layers, may be regarded as made up of a fluid middle part, in which friction increases with increase in viscosity, contained between boundary layers capable of reducing friction by a greater amount than that due to the viscosity increase in the fluid middle part. The friction reducing property of the boundary layers is explained on the hypothesis[3] that oil molecules in the active state of the early stage of oxidation become attached by their active parts to the metal surfaces and to the inactive part of others already adsorbed. Oxidation activity being sufficient, a load carrying boundary layer many molecules in thickness but decreasing in rigidity in the direction of motion, is built up on each of the lubricated metals to a surface of slip on which motion can occur with little friction. The activated molecules not attaching themselves to surfaces form aggregates by attachment to others and thereby increase viscosity. Thus fluid friction increases in the middle part of the oil film, while the total friction diminishes with the coincident increase of slip on the surfaces of the boundary layers.

The building up of a load carrying boundary layer necessarily of active molecules and of appreciable thickness depends on oxidation processes in the oil, but these are known to be affected also by the nature of the metal of the boundary surfaces. The experiments to be described at present deal only with the bearing of the first mentioned effect on lubricating value.

There is much experimental evidence indicating that the oxidation of oils begins by the direct attachment of a molecule of oxygen to an oil molecule, addition compounds of the nature of peroxides being formed. The compounds are chemically active and promote autoxidation, that is, they act as catalysts to promote the oxidation of substances which otherwise require a higher temperature for the initiation of the effect. Thus a blended mineral oil containing an easily

It is proposed to describe experiments made with blends and single varieties which appear to confirm the views stated, and lead, therefore, to the suggestion that improvement of the lubricating value of mineral oil blends should be sought for by investigating their oxidation characteristics. The experiments were made in the National Physical Laboratory with the co-operation of C. Jakeman. The apparatus used and the methods of experiment are described briefly only, in the next section, in view of the more detailed description given when describing experiments dealing in a general way with lubrication in oxidizing conditions[4].

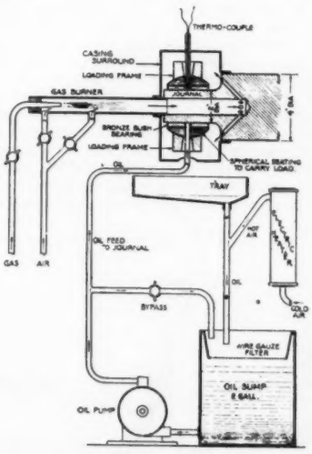


Figure 2.—Journal heating and oil circulating systems

Experimental Method and Apparatus

The lubrication trials were made using the Jakeman machine, which differs from the familiar Thurston type in that the temperature of the oil film can be raised artificially by a gas flame, and the load remaining constant a seizing temperature is obtained instead of a seizing pressure. The friction falls as the oil film diminishes in thickness with rise of temperature, a minimum value being obtained generally before the seizing temperature is reached and the rotation of the journal stopped automatically. Many lubrication seizures can occur in this way without abrasion of the rubbing surfaces.

The fresh oil feed fitted to the machine was replaced by the circulatory system, shown by Figure 2, providing for a small quantity, maintained in a state of oxidation activity, to be used continuously for any period. The oil, supplied by force feed from a sump, after passing through the bearing, is in part thrown off the rotating journal as mist and spray into the oxidizing mixture of air and hot products of combustion from the gas burner contained in the casing surround. The oil running from the surface of the casing is collected in the open tray shown in the figure, and while draining to the sump, is further oxidized by exposure to a stream of air raised generally to 160° C. by the electric heater. The rate of circulation of the oil varied from about 4 to 30 ounces per minute. A 2-gallon sample was used, so on the basis of an average rate of circulation of 16 ounces per minute, the whole sample passed through the testing machine about eight times per hour. The rate of circulation was always in excess of that required for "bath" lubrication and was used to promote oxidation and assist temperature control.

Figure 2 shows, also, the essential details of the machine other than the devices for applying the load and measuring the friction torque. Referring to the figure, it will be seen that the hot gases from the burner, after passing through the hollow journal, return by the inclined flues in the main shaft to the casing enclosing the journal bearing. A thermocouple set at the bottom of a small hole drilled into the top side of the bronze bush is used to indicate the approximate temperature of the oil film. The bronze bearing bushes were renewed as required, but were always of the same quality, 2½ inches long and the bore 0.0075 inch greater than the diameter of the journal. The load bearing area is small for a new bush, but after "running in" extends over an arc of 80 to 100 degrees. The use of a bronze bush was restricted to a limited period following the attainment of the normal arc of wear. The diameters of the journal and bush were measured, and the arc of wear inspected before and after every trial. When the clearance had increased by 0.012 inch. or the arc of wear extended beyond 120 degrees, the bush was rejected.

The experiments were concerned mainly with the performance or lubricating value of oil in extreme conditions of use, that is, when because of a combination of heavy load and high temperature the film between the particular lubricated surfaces becomes extremely thin with seizure imminent. All of the experiments were made with a surface rubbing speed of 11.3 feet per second and a loading of 1,000 pounds per square inch of projected journal area, corresponding to a unit loading of 2,000 pounds approximately, taken on the normal arc of wear. The performance or useful lubricating value of a particular oil, in the circum-

*Read before Royal Society of Arts, London, England, January 9, 1934. Presented through Institution of Petroleum Technologists.

[1]Hardy and Nottage, Dept. Sci. and Ind. Res., "Lubrication Research," Tech. Paper No. 1, pages 9 and 19.

[2]Gilson, "Some Bearing Investigations," General Electric Review (U. S. A.), page 323, May, 1924.

[3]King, "The Beneficial Effect of Oxidation on the Lubricating Properties of Oil," Proc. Roy. Soc. A., Vol. 139, 1933.

[4]King and Jakeman, "Lubrication in Oxidizing Conditions," Aero. Res. Ctte., Rep. & Mem., No. 1517.

stances, load being constant, is taken to be indicated by the coefficient of friction observed at the temperature of minimum friction, designated hereafter as μ min., and the somewhat higher temperature at which, owing to a further decrease of film thickness, seizure actually occurs. The letters S.T. will be used hereafter as an abbreviation of seizing temperature. The trial of a particular oil was continued as long as marked changes of μ min. and S.T. were observed, and required the use of the testing machine for daily runs of about 7½ hours, over a period of one to two weeks. A complete set of friction observations at temperatures over the range 40° to S.T. was taken daily.

The experiments were begun with the bronze bushes lathe bored, using a broad finishing tool. The surface obtained, described hereafter as an "A" surface, was without measurable effect on the performance of high viscosity oils used at relatively low temperatures. When, however, the performance is expressed in terms of μ min., and therefore at temperatures approaching that of seizure, the oil film is extremely thin, and, apart from special oxidation lubricating value, the friction observed is made up of fluid friction varying over the bearing surface with variations of film thickness and adsorbed layer friction varying with high spot area which changes in extent with wear. The mixed friction region for oil of the viscosity of M.B., in the load and speed conditions of the trial, extends over the temperature range 50° to 160° C. The region of high temperature oxidation lubrication was not attained until the bronze bearing bush was provided with a smooth and true surface. The most effective surface was obtained by "running in" the journal bearing surface with castor oil containing lead tetraethyl in the small proportion of 7 c.c. per gallon. The experiments described in Section 3 were made with highly finished surfaces except when the "A" surface is mentioned.

The physical properties of the mineral oils used for the experiments described in Section 3 are given in Table 1. Oil M.B. is a proprietary blend, the proportion and nature of the constituents being unknown. Oil M.B. 2 is a known blend containing 40 per cent of "bright stock," 30 per cent of a paraffin base distillate and 30 per cent of an asphaltic base distillate. Oil C.S. is refined from the residuum from the distillation of Pennsylvania crude oil and is generally known as "bright cylinder stock." Oil R.N. (No. 1 Russian) is a distillate from what is generally regarded as a naphthenic base crude, and V.A. is also a distillate but procured from an aspaltic base crude. Oils R.N., C.S., V.A., are typical varieties commonly used to make up blends having properties considered desirable for the lubrication of aero engines.

TABLE 1—PHYSICAL PROPERTIES OF THE OILS

	M.B.	M.B.2	C.S.	R.N.	V.A.
Sp. gr. at 60° F.	0.905	0.9105	0.891	0.909	0.937
Closed flashpoint	420°F.	440°F.	505°F.	385°F.	445°F.
Redwood vis. 70°F.	2,164 secs.	2,301 secs.	6,800 secs.	1,290 secs.	4,105 secs.
Redwood vis. 140°F.	216 secs.	226 secs.	550 secs.	133 secs.	360 secs.
Redwood vis. 200°F.	72 secs.	74 secs.	150 secs.	53 secs.	75 secs.
Pourtest (A.S.T.M.)	25°F.	20°–25°F.	20°F.	0.8°F.	10°F.

TABLE 2—M.B. OIL TRIAL, LOAD 1,000 LBS./SQ. IN., SPEED 11.3 FT. PER SECOND, BUSH "RUN IN" ON DOPED CASTOR OIL

Time hours	Running temp.	μ 40°	μ min.	Temp. of μ min.	S.T.
54½	180	0.0035	0.00055	285°	307½°
61	185	0.00315	0.00045	255°	
68½	160	0.0033	0.00055	250°	Seizing
71	...	0.00375	0.00070	226°	temperature
78	185	0.0035	0.00050	255°	too
87	210	0.0035	0.00070	260°	high
95	185	0.00365	0.00055	250°	to be
102	190	0.0034	0.00055	255°	observed
105	...	0.0036	0.0005	250°	with
111	190	0.00365	0.0005	255°	safety.
118½	210	0.0038	0.00065	255°	
125½	150	0.00375	0.00075	250°	
132½	195	0.0037	0.0005	250°	
140	180	0.0038	0.0005	255°	
142	...	0.0036	0.0005	250°	
149	175	0.00375	0.00045	255°	
156	195	0.0040	0.00075	255°	

Lubrication Trials

Experiments with the blended oil M.B. The graphs, Figure 3, show the improvement in lubricating value of oil M.B. during a running time of 61 hours, oxidation activity being maintained during the period. The seizing temperature was then in excess of 370° C., and the oil was emitting smoke and steam profusely.

The testing machine was not designed to run at oil film temperatures higher than 250°, even for short periods, and the trial was continued at lower running temperatures. The temperature was, however, raised daily to 260° C. in the expectation that in the severe conditions seizing temperature would fall soon to an observable value, but a further running time of 100 hours was required before this occurred. The relatively low value of 137° C. then observed seemed to indicate an accidental condition, because on continuing the trial, seizing temperature rose rapidly and friction diminished in the manner observed when the oil was fresh. The trial was discontinued at 197½ hours while lubricating value as determined by μ min. and S.T. was improving, although the oil was heavily impregnated with oxidation or decomposition products.

Observations of μ 40° and μ min. made during the period 54½ to 156 hours, while seizing temperature was too high to be observed safely, are given in Table 2, and it will be seen that lubricating value as shown by the coefficient of friction varied irregularly.

Variations of friction at the relatively high temperature of the minimum value are attributed to variation of oxidation activity, but might be regarded as due to accidental changes of surface smoothness of the bronze bush. The latter explanation does not suffice, however, for the irregular changes of μ 40° observed necessarily when the oil film is of sufficient thickness for surface imperfections to be of minor importance. The changes of friction at 40° will, therefore, be considered and can be explained as depending on three factors:

(a) An increase of fluid friction as oxidation products accumulate during the course of the trial and increase viscosity.

(b) A decrease of friction due to oxidation activity. The effect is of a residual nature, the recorded magnitude depending on the interval of time between activation and the taking of observations.

(c) A decrease of fluid friction following from the breaking down of molecular aggregates with the effect of decreasing viscosity, during the late stage of oxidation reached at the higher temperature of the trials. The effect is permanent, depends on time of exposure to the extreme conditions of the trials and indicates the end of the oxidation lubrication life of the oil.

The considerations mentioned lead to the conclusion that the oxidation lubrication value of a blended oil especially is dependent on its history as well as on the nature of the constituents. Thus oxidation activity can be induced readily in a fresh oil containing unsaturated compounds and in suitable conditions the process will continue by autoxidation, the oil improving in oxidation lubrication value although not used, an effect which has been observed but not made the subject of special experiments. The effect is analogous to the well-known tendency, now attributed generally to peroxidation, of the lighter oils used as fuel to form gum on standing when the constituents are in part unsaturated compounds. When, on the other hand, an oil has been used in severe conditions for a period so long that the more easily affected constituents have passed through the early stages of oxidation, greater oxidation stimulation would be required to improve lubricating value, and the effect would diminish on the withdrawal of activation. M.B. oil, for example, failed to retain, on standing, the exceptional oxidation lubrication value stimulated during the course of a long trial. Thus a fresh sample of the oil which attained a performance represented by a μ min. of 0.0005 and a S.T. of 309°, on the completion of 40 hours' activation, when used again after standing for two months was found to have lost about 50 per cent of oxidation lubrication value, μ min. being 0.0008 and S.T. 235°. The process of improvement began anew on continuing the trial, but proceeded less rapidly than when the sample was fresh.

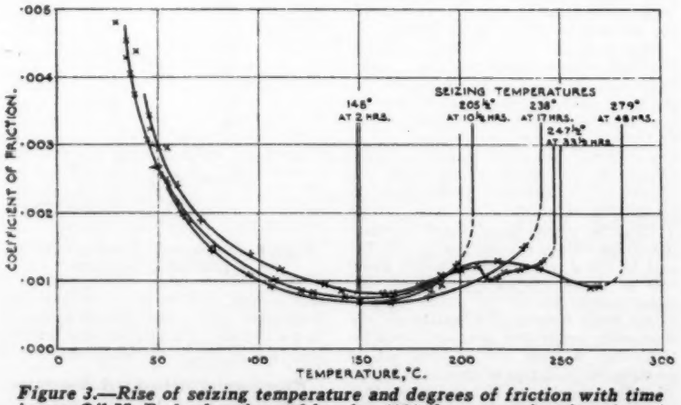


Figure 3.—Rise of seizing temperature and degrees of friction with time in use. Oil M. B., load on journal bearing 1000 lbs. per sq. in. of projected area. Air at 160° C. blown into circulated 2-gal. test sample of oil

The Single Variety Oil, R.N.

The double effect of oxidation, namely, to form partial oxidation products initially and to break down molecular aggregates in the later stage, has been mentioned. When the blended oil M.B. was used for trials the first mentioned effect was especially evident and long lived, and the accompanying oxidation activity led to an improved lubricating value maintained over a period of corresponding length, which tended to mask the deleterious effect of the breakdown of molecular aggregates. The two effects are, therefore, difficult to distinguish during trials with oil M.B., but their incidence is clearly evident in relatively short trials of oil R.N. Visible oxidation products were not formed in the conditions of the trials, and viscosity as indicated by the value of μ 40°, after a short period of increase, diminished with the progress of oxidation. Trials of the oil, conducted at relatively low running temperatures, and using an "A" surface bush, show an initial improvement of performance with the progress of oxidation; μ min. diminished from 0.00125 to 0.0009 and S.T. increased from 73° to 163°, over a period of 71 hours' running. The improved performance was not maintained on continuing the trial, and at 88 hours' μ min. had increased to 0.0010 and S.T. had fallen to 134°. The significant feature of the trial, in respect of oxidation effects is that μ 40°, dependent mainly on viscosity, ceased to increase with the progress of oxidation immediately following the attainment of the optimum performance. That is, on exceeding 71 hours' exposure of the oil to the oxidizing conditions, the further increase of viscosity is balanced by the dimunition due to the breakdown of molecular aggregates, an effect indicating the advent of the final stage of the life of the oil as a lubricant.

The oxidation lubrication life of fresh R.N. oil in the running conditions of the trial described, extending over a period of about 71 hours only, would be expected to depend, therefore, to a notable degree on the oxidation history of the oil prior to use as a lubricant. The pronounced effect of oxidation history was confirmed by lubrication trials of three samples of oil R.N. submitted to varying periods of oxidation before being

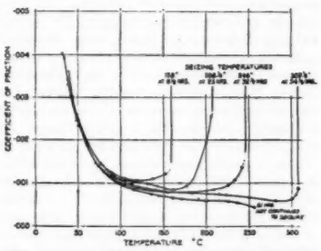


Figure 5.—Rise in seizing temperature and decrease of friction with time of use—oil M. B. 2. Load of journal bearing 1000 lbs. per sq. in. of projected area. Air at 160°C. blown into circulated 2-gal. test sample. Surface speed 11.3 ft. per second

used in the testing machine. The samples taken in turn were pumped from a sump maintained at 70° into the throat of a small venturi through which air heated to 165° was blown by a compressor. The oil mist and spray discharged into a closed iron cylinder, draining back to the sump for recirculation. The oxidizing conditions, especially in respect of the spraying of the oil, were more severe than during lubrication trials, but visible oxidation products were not formed. A sample oxidized for 10 hours scarcely changed color. Oxidation for 20 hours effected a change from the original straw color to a light brown, and for 30 hours to a deep red. The significant changes of S.T. and friction, observed when the preoxidized samples were submitted to trial, are given in Table 3. The similar changes observed during the trial of fresh oil are included. The plus sign indicates an increase and the minus sign a decrease of the values observed over the stated times.

The experimental results given in Table 3 show the extent of the reduction of the oxidation lubricating life of the oil by the preoxidation treatment. Thus, when a sample of the oil was preoxidized for a short time longer than 20 hours the oxidation lubrication value was completely exhausted, and the performance of a 30-hour sample deteriorated as from the beginning of the trial in the testing machine. A permanent deterioration following immediately the attainment of an optimum lubricating value appears to be characteristic of oil R.N., and after a relatively short period of use in oxidizing conditions the oil becomes an inert fluid in which oxidation lubricating value cannot be stimulated.

The described oxidation lubrication effects for oil R.N. were obtained when running temperatures did not exceed 100° C. and the oil was used to lubricate an "A" surface bush. Similar effects were

observed in relatively small degree only when higher running temperatures ranging from 150° to 180° became possible on improving the lubricated surfaces, see Table 4.

The experimental results given in Table 4 may be taken to show that oxidation activity at the higher temperatures is not of a type to improve the lubricating value of oil R.N., or that the consequent improvement was exceptionally short lived, occurring mainly during the few hours of the trials preceding the first observation of μ and S.T.

The Single Variety Oil, C.S.

The basic variety C.S. possesses an exceptionally high viscosity and greater resistance to oxidation than other mineral oils, according to oxygen absorption tests. When the running temperature during lubrication trials was not higher than 100°, performance in terms of μ min. and S.T. remained unchanged during a trial period of 54 hours, but μ 40° increased from 0.0047 to 0.0054 indicating an oxidation effect of some sort, tending to increase viscosity. A fresh sample of the oil, when used for trials made at relatively high running temperatures, improved in lubricating value with the progress of oxidation, μ min. diminishing from 0.0010 to 0.0008 and S.T. rising from 161° to 235° during 20 hours of use, but μ 40° diminished slightly. The same sample used two months later exhibited a substantially invariable performance in respect of μ min. and S.T., but μ 40° tended to increase.

A synopsis of the trial results for oil C.S. is here given. The color of the oil remained unchanged during the trials made at a running temperature of 100°, but visible oxidation products formed in the oil during the later trials when running temperatures ranged from 130° to 175°, and were raised at daily intervals to over 200° to induce seizure. The trial periods were too short to determine the effect of oxidation on the life of the oil.

It will be seen, by reference to Table 5, that oxidation at the relatively high temperatures of the later trials, (b) and (c), effects an irregular decrease of μ 40°, attributable to the decrease of viscosity due to the breakdown of molecular aggregates being greater than the increase due to oxidation. The defect of oxidation activity of the type causing an increase in viscosity, when the oil is used at high running temperatures, accounts for the relatively high values of μ 40° and the small improvement of performance in terms of μ min. and S.T. as compared with that obtained when using the blended oil M.B. The explanation is supported by the measured overall viscosity changes of the oils. The viscosity of oil C.S. taken at 200° F. was 150 Redwood seconds when fresh, and had reverted to the same value after the high temperature trials (b) and (c), whereas the viscosity of oil M.B. increased in similar circumstances, from 72 to 85 Redwood seconds. The results of trial (a), made at relatively low running temperatures, appear to be inconsistent with the explanation because the definite increase of μ 40° then obtained, although indicating oxidation activity of the type increasing viscosity, was not accompanied by an improvement of performance in terms of μ min. and S.T. The reason is probably that the first mentioned trials were made with an "A" surface bush, which led to rupture of the oil film at lower temperatures than required to obtain oxidation lubrication in oil C.S.

Single Variety Oil V.A.

The performance of the asphaltic base oil V.A. was inferior to that of C.S. when trials were made using "A" surface bushes; but the two oils were found to be of nearly equal merit, in terms of μ min. and S.T. when on improving the surface of the bush, trials could be made at high running temperatures.

Referring to the tables, it will be seen that the improvement of the lubricating value of oil V.A. with the progress of oxidation is the same approximately as that observed for oil C.S. The trial of oil V.A., carried on for a running period of 28 hours only, was discontinued before the effect of oxidation on the life of the oil was determined fully. A sudden dimunition of μ 40°, Table 6, occurred after 21 hours running, however, and the Redwood viscosity of the used oil measured at 200° F. was 74.5 seconds as compared with 75 seconds for the fresh oil. Oxidation products accumulated in the oil to a notable extent during the relatively short period of the trial.

TABLE 3—OIL, R.N., SHOWING CHANGE IN LUBRICATING VALUE DURING TRIALS OF FRESH AND PREOXIDIZED SAMPLES

	Fresh oil	Preoxidation time: 10 hours	20 hours	30 hours
S.T. change	+90°	+54°	+29°	−17°
μ min. change	−0.00035	−0.00020	−0.00020	0.0
μ 40° change	+0.0006	+0.00045	0 0	0 0
Time required	71 hours	61 hours	26 hours	7 hours

TABLE 4—TRIAL RESULTS OIL R.N., FRESH SAMPLE

Time hours	Running temp.	μ 40°	μ min.	Temp. of μ min.	S.T.
395	...	.....	.....	.....	...
401	...	0.0027	0.0005	160°–170°	184
408	170	0.0025	0.00055	160°–185°	220
414	170	0.0029	0.00055	150°–190°	225
417	...	0.0029	0.0005	150°–190°	223
424	180	0.0029	0.0005	150°–190°	230

TABLE 5—TRIAL RESULTS OIL C.S.

(a) Fresh Sample Used With an "A" Surface Bush.

Time hours	Running temp.	μ 40°	μ min.	Temp. of μ min.	S.T.
2	100	0 0047	0 00125	122	141
26	100	0.0053	0.0012	110–122	132
54½	100	0 0054	0.0013	118–130	145

(b) Fresh Sample Used at High Running Temperatures.

2	...	0.0060	0.0010	140–150	161
9	130	0 0057	0 00095	140–185	218
19	...	0.0056	0 0008	160–215	235
25	170	0.0058	0.0008	160–190	227
45	175	0.0058	0.0008	165–190	221

(c) Same Sample Run Two Months Later.

9	150	0.0053	0.0008	150–230	257½
16	150	0.0058	0.0008	150–235	256
30	165	0.0056	0.0007	155–230	257½

TABLE 6—OIL V.A., FRESH SAMPLE, BUSH NO. 32

Time hours	Running temp.	μ 40°	μ min.	Temp. of μ min.	S.T.
424½	...	.....	.....	.....	...
430	...	0.0042	0.0008	130–160	176
435	160	0.0045	0.0008	140–170	213
438	...	0.0046	0.0008	140–185	206½
445	140	0.0047	0.0007	140–190	195½
452	155	0.0043	0.00075	150–210	225½

TABLE 7—OIL C.S., FRESH SAMPLE, BUSH NO. 32

Time hours	Running temp.	μ 40°	μ min.	Temp. of μ min.	S.T.
452	...	.....	.....	.....	...
454	...	0.0060	0.0010	140–150	161
461	130	0.0057	0.00095	140–185	218
468½	140	0.0055	0.0008	160–185	219½
471	...	0.0056	0.0008	160–215	235
477	170	0.0058	0.0008	160–190	227
484	180	0.0058	0.0008	140–190	230½
490½	175	0.0059	0.0008	165–180	215½
497	175	0.0058	0.0008	165–190	221

Blended Oil, M.B. 2

The oil was blended of 40 parts oil C.S., 30 of an asphaltic base oil similar to V.A. and 30 of a paraffin base distillate. The lubrication trial was made at relatively high running temperatures, but came to an involuntary stop on completion of 45 hours running, when the thermocouple broke through the bronze bush and fouled the journal. Temperature and friction observations for the period run are given graphically by Figure 5. The S.T. was rising when the trial was discontinued and the maximum for the blend was therefore not determined, but the rate of increase with time of running and oxidation was substantially the same as that observed for the blend M.B., which ran to a S.T. of over 300° in the same conditions. A feature of the trial illustrating the effect of autoxidation is that the blend of the high viscosity and not easily oxidizable oil C.S. with two inferior varieties attains an S.T. of 279° after 45 hours of use and oxidation, whereas the maximum observed during a trial of C.S. alone was 235°. The two trials were run in the same conditions and with the same bronze bush, the trial of oil M.B. 2 following immediately after that of oil C.S. It is apparent from an inspection of the curves, Figure 5, that oxidation activity is deficient over the temperature range 150° to 220° leading to a tendency to seizure indicated by friction increasing as the temperature rises. Oxidation activity over the higher range 220° to 270°, however, suffices to reduce the tendency to seizure, friction falling as the temperature rises. The blend requires the addition of a constituent adapted to promote oxidation activity over the lower range of temperature. Comparing Figure 3 with Figure 5, it will be seen that oxidation activity in the blend M.B. is of more nearly uniform effect over the temperature range 150° to 300°. The attainment of optimum performance in trials of either blend requires oxidation for a running period of the order of 50 hours, when made up of daily runs of about 7½ hours. The same effect would be expected in a shorter period of continuous running in the same conditions. The ability of blends containing constituent oils of dissimilar oxidation characteristics to run as lubricants in more severe conditions than single varieties is attributed to the possibility of maintaining oxidation activity by autoxidation in such mixtures to a greater extent than in single varieties.

Conclusions

The oxidation behavior of the single varieties of oils used for trials at high running temperatures is significant in that the degree of improvement of lubricating value with the progress of oxidation is slight and persists for a relatively short time. Furthermore, viscosity increases with use and oxidation for a short period only, then diminishes and does not recover the former higher value on further oxidation.

The overall viscosity changes of the single varieties and the two blends during the trials described are shown by "before and after" measurements given below.

TABLE 8—VISCOSITIES OF OILS BEFORE AND AFTER LUBRICATION TRIALS REDWOOD SECONDS

Oil—	Vis. at 140°F. Fresh	Vis. at 140°F. Used	Vis. at 200°F. Fresh	Vis. at 200°F. Used
M.B.	216	290	72	85
M.B. 2 ...	226	280	74	83
R.N.	133	140	53	54
C.S.	550	568	150	150
V.A.	260	279	75	74

The measurements indicate that the single varieties, after the oxidation time of the trials, do not increase in viscosity with further oxidation except at relatively low temperatures, and that at temperatures exceeding 200° F. (93° C.) a decrease of viscosity would be expected. The measured viscosity changes accord, therefore, with the observed tendency of μ 40° to decrease during the later stages of the lubrication trials of these varieties, made at running temperatures ranging from 150° to 200°. Furthermore, the failure of oxidation activity to increase or maintain viscosity is concurrent with a failure of performance to improve with continued use and oxidation. The viscosities of the blended oils M.B. and M.B. 2, on the other hand, continue to increase or at least are maintained at an increased value over relatively long periods of oxidation, while performance improves and remains at the higher level attained. The oxidation behavior of the blended oils is attributed to autoxidation. Thus, the lubricating value of a blend of a high grade oil not easily oxidized, such as C.S., with other oils tending to oxidize at relatively low temperatures, may be greater than that of the better constituent used alone. The effect depends on autoxidation, that is oxidation of the better constituent promoted by the active oxidation products formed more readily in the inferior one. The blending of oils for optimum performances in oxidizing conditions is dependent, therefore, on a selection of constituents to maintain the necessary oxidation activity in the blend over the range of temperature required in use. A method of selection is indicated by the effect of oxidation on change of viscosity, but requires development by further experiments to relate changes of viscosity in conditions promoting oxidation to change of lubricating value in the same conditions.

The attainment of the state of oxidation lubrication would be expected to prevent wear of the bronze bush even in the severe conditions of the trials. Measurements made before and after using oil M.B. indicate that the metal of the bush tended to flow rather than to wear. On the other hand, when the degree of oxidation lubrication was slight or nonexistent as in trials with oil R.N., the wear of the bush was pronounced.

The experiments described were not made for the purpose of showing that mineral oils should be blended according to oxidation characteristics. Had that purpose been in view, more complete evidence might have been obtained. The significance of the experimental results may, however, be enhanced by their not having been obtained with the object of supporting a particular hypothesis.

Wells Nearing Mechanical Lift Stage of Production

(Continued from Page 8)

it would be well for the operator to make up his mind promptly as to what must be done and proceed to do it. In the remaining life of this field the race will be to the swift.

While experimenting here cannot be recommended for the small operators, some experimenting will undoubtedly be done in this field during the present year by the larger companies that will probably be of great value in pointing the way toward better methods for handling other deep wells with the general characteristics of the Oklahoma City Field. Doubtless betterments will be made in pumping equipment, and there are many reasons to believe that great improvements can be made in gas-lift practice. When wells were flowing naturally, hookups at the wells were made for a different purpose than is the case with low flowing pressures and gas-lift operations, and changes can be made that would benefit nearly every well in the Wilcox zone. No specific recommendations can be made for the field as a whole since each well is an individual problem.

ALBANIAN OIL DEVELOPMENT

According to the Italian press, Albanian oil field concessions now embrace 650,000 acres, and 65 wells were drilled last year. More than half the concessions are in the hands of Italians, who were responsible for drilling 48 of the wells. Some 17,000 acres have been ceded to a British company.

Next Osage Sale, Feb. 7, Is Expected to Attract Big Bidders Because of Desirable Offerings

A long time has elapsed since Osage sales attracted much attention, but the next one, to be held on Wednesday afternoon, February 7, at Pawhuska, is expected to attract some or all of the big companies—those who in years gone by thought nothing of bidding a million for a lease of 160 acres in the Burbank Field.

List of Tracts

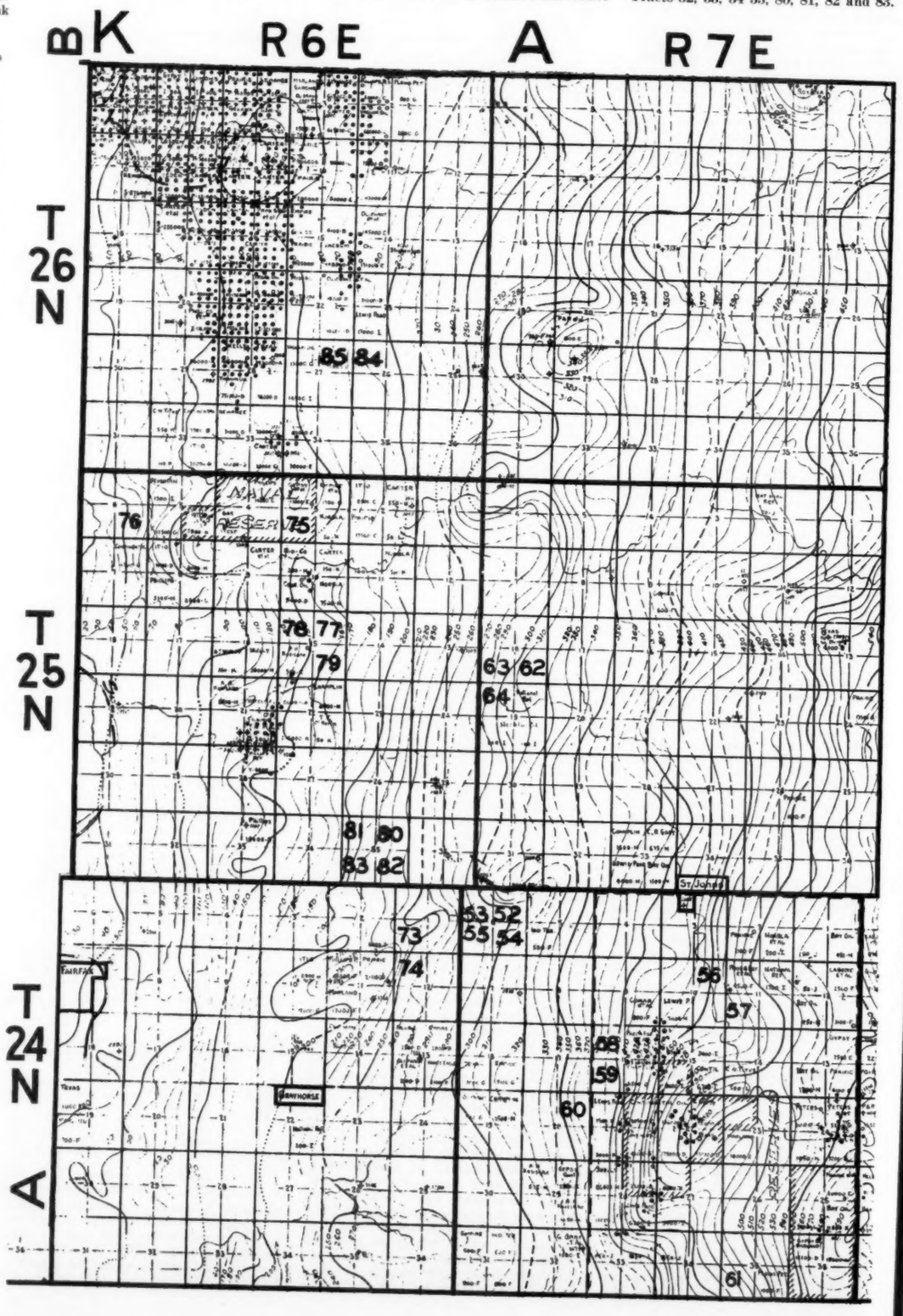
Tract	Description	Acres
1	NW 27-22-11	160
2	SE 30-24-11	160
3	SW 30-24-11	160
4	NE 31-24-11	160
5	NW 31-24-11	160
6	NW 32-24-11	160
7	SE 29-28-11	160
8	NE 32-28-11	160
9	NE 26-21-10	160
10	NW 26-21-10	160
11	SW 26-21-10	160
12	NE 27-21-10	160
13	SW 25-22-10	160
14	NW 6-21- 9	160
15	SE 34-21- 9	160
16	SW 34-21- 9	160
17	NE 1-21- 8	160
18	NW 1-22- 8	160
19	SE 1-22- 8	160
20	SW 1-22- 8	160
21	NE 2-24- 8	160
22	NW 2-24- 8	160
23	SE 2-24- 8	160
24	SW 2-24- 8	160
25	SE 4-24- 8	160
26	SW 4-24- 8	160
27	SE 9-24- 8	160
28	SW 10-24- 8	160
29	SE 13-24- 8	160
30	NW 16-24- 8	160
31	SE 17-24- 8	160
32	SW 17-24- 8	160
33	SE 19-24- 8	160
34	SE 21-24- 8	160
35	SW 22-24- 8	160
36	NW 36-26- 8	160
37	NW 3-22- 7	160
38	S½ NE 25-22- 7	80
39	SE 25-22- 7	160
40	SW 25-22- 7	160
41	NW 5-23- 7	160
42	SW 5-23- 7	160
43	NE 6-23- 7	160
44	SE 6-23- 7	160
45	NE 10-23- 7	160
46	SW 11-23- 7	160
47	SW 14-23- 7	160
48	SE 30-23- 7	160
49	SW 30-23- 7	160
50	NE 31-23- 7	160
51	NW 31-23- 7	160
52	NE 6-24- 7	160
53	NW 6-24- 7	160
54	SE 6-24- 7	160
55	SW 6-24- 7	160
56	NE 10-24- 7	160
57	SW 11-24- 7	160
58	NW 16-24- 7	160
59	SW 16-24- 7	160
60	NE 20-24- 7	160
61	SW 35-24- 7	160
62	SE 18- 25- 7	160
63	SE 18-25- 7	160
64	NW 19-25- 7	160
65	NE 11-23- 6	160
66	NW 11-23- 6	160
67	SE 11-23- 6	160
68	SW 11-23- 6	160
69	NE 22-23- 6	160
70	NW 22-23- 6	160
71	SE 22-23- 6	160
72	SW 22-23- 6	160
73	SW 1-24- 6	160
74	NW 12-24- 6	160
75	SW 3-25- 6	160
76	SE 6-25- 6	160
77	NE 15-26- 6	160
78	NW 15-25- 6	160
79	SE 15-26- 6	160
80	NE 35-25- 6	160
81	NW 35-25- 6	160
82	SE 35-25- 6	160
83	SW 35-25- 6	160
84	NW 26-26- 6	160
85	NE 27-26- 6	160
86	NW 36-27- 5	160
Total		13,680

The accompanying map is a part of Kirk Nagle's complete Osage sale map on which he has indicated all the 86 tracts to be offered. The section of the map shown here takes in the territory south and east of the southern end of the Burbank Field, and includes the Naval Reserve areas which in the past few weeks have attracted so much attention by reason of the big wells in the reserve area in Township 24-7 and more recently by the discovery of a new pool in Section 10-25-6. The Mead Brothers, drilling contractors in Tulsa, together with the Sinclair Prairie Oil Co., completed a test in the NE cor. SW Section 10-25-6, in Burbank or Bartlesville sand at 2,805-45 feet, the well starting off at 850 bbls. a day.

In the accompanying map, Plats No. 77, 78 and 79 are shown as offsetting the discovery lease and will be up for sale to the highest bidders. The Skelly Oil Co. owns the west offset lease.

Tract 75, which lies between the Mead-Sinclair Prairie discovery and the Burbank Field is also regarded as an important piece because there is an impression abroad that the Mead discovery well is an extension of the Burbank Field rather than the opening well of a separate pool.

Attention is called to the group of leases lying between the Fairfax Pool in Township 25-6 and the Naval Reserve Pool in Township 24-7. These include Tracts 52, 53, 54 55, 80, 81, 82 and 83.



Maybe it is wise to buy up distress gasoline to keep it off the market – but it's wiser not to make it

Dubbscracking is the way to make gasoline that sells – that brings the price There is never enough to go round

More Dubbscracking means less distress gasoline

And better prices

Universal Oil Products Co
Chicago Illinois

Dubbs Cracking Process
Owner and Licensor

Will you do us a favor?

Just check these three questions . . . then

TEAR AND MAIL

WE are making an analysis of our past sales effort on Tru-Lay Preformed Rotary Lines. We would appreciate your frank co-operation in this effort, for which we will gladly reciprocate at any time.

Less than ten years ago we announced the manufacture of a new rotary line, its wires and strands preformed to the shape and position they would occupy in the finished line—thus eliminating internal stress and strain. Thousands of service records have proven that this manufacturing process has added materially to the life of the rotary line.

The sales goal set at that time has already been exceeded by a wide margin—a source of great satisfaction to me. We want to do an even better job, which must be based on intelligent sales analysis. Will you help us by placing a check mark before the questions in the coupon to the left? Then tear and mail.

To assist you, the opposite page carries a few of the advertisements which have appeared on Tru-Lay Preformed Rotary Line. Thank you! Of course, I would appreciate it if you cared to write me personally.

Yours very truly,
AMERICAN CABLE COMPANY, *Inc.*

G. O. Moon
VICE-PRESIDENT

AMERICAN CABLE COMPANY, Inc.
Wilkes-Barre, Pennsylvania

Yes ☐ **No** ☐ Has our advertising in THE OIL AND GAS JOURNAL interested you in Tru-Lay Preformed Rotary Line?

Yes ☐ **No** ☐ Has our advertising in some other publication interested or influenced you *more* than it did in THE OIL AND GAS JOURNAL?

Yes ☐ **No** ☐ Has our advertising helped you understand why the preformed principle adds materially to the life of rotary line, as proven by thousands of service records?

(Additional comments by letter would be appreciated, including name of publication other than The Oil and Gas Journal, if your answer is "Yes" to second question)

You have seen these advertisements in this publication

Your Name.....

Firm Name.....

City..... **State**.....

THANK YOU!

TRY WRITING LIKE THIS...
THEN RELAX AND WRITE
When they take THEIR off "Make-up"
A FEW OF THE MANY ADVANTAGES OF TRU-LAY ROTARY LINES
GET THE FACTS.. SEND FOR THIS STORY TODAY
PERFECT CO-ORDINATION MAKES A CHAMPION
. . . LIKEWISE IN ROTARY DRILLING LINES
AMERICAN CABLE COMPANY, Inc.
TRU·LAY
PREFORMED ROTARY LINES
A CHAMPION · BY MEASURE OF SERVICE
PERFECT CO-ORDINATION
MAKES A CHAMPION . . . Perfect co-ordination applies to man and machine alike . . . it is a basic law of nature . . . without perfect co-ordination of muscle and mind no athlete becomes a champion . . . without it no machine performs efficiently.
DO THIS
HOW DO THIS
IN TRU-LAY, perfect co-ordination among strands is obtained by preforming wires and strands so they lie naturally in position. Strands are freed from internal stress, and lying relaxed in their helical form, each strand carries an equal share of the load . . . in team work with each other strand.
Now consider what takes place in a non-preformed wire rope. Strands and wires are forcibly held in place against their will—which sets up fatigue stresses . . . and unbalanced strand loads. Common rope lore tells us that such a rope cannot possibly give the same amount of service as Preformed Wire Rope of the same size, grade and construction.
Save money . . . you get much longer service with
. . . AND ONLY A WIRE ROPE CHAMPION COULD ESTABLISH SUCH OUTSTANDING RECORDS:
78% INCREASED SERVICE
104% INCREASED SERVICE
REMEMBER: The actual results of sustained tests of TRU-LAY Preformed . . . evidence more preformed wire rope of the finer sizes and grades . . . average considerably recorder over a period of time . . . on the same equipment and under identical operating conditions . . . the results of many such tests are overwhelmingly in TRU-LAY'S favor.
In the event that TRU-LAY does not return service commensurate with its slightly higher price, You will confer an added moral bond upon the service actually rendered. You cannot afford to pass up such a fair proposal. Wire rope is an important factor to your production costs, and you will be wise if you order TRU-LAY next for your next replacement rope . . . so you will have it on hand when needed.
AMERICAN CABLE COMPANY, Incorporated
TRU·LAY
PREFORMED WIRE ROPE

THE OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published Weekly by

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Member, Audit Bureau of Circulations

Program Going Through

The improved tone in the gasoline market reflects the growing confidence throughout the industry that the efforts at Washington to stabilize the oil business are going to be carried through.

Doubt is disappearing and instead of skeptical pessimism the general tenor is now frankly optimistic. Where it was usually argued there was no possibility of the government and the industry agreeing upon a program there is now a conviction that disagreement will not be permitted to defeat the purpose of the government, supported as it is by the great bulk of the industry.

The reservations announced by Administrator Ickes in approving the agreements were, in some particulars, not agreeable to some who preferred the agreements as they were but it was, perhaps, expecting too much to hope the originals would be accepted verbatim.

If Mr. Ickes has not gone as far as some wished he has not hesitated to go as far as he considered necessary at this time. The industry has been offered a revised agreement that will give it opportunity to make a workable beginning on stabilization. That is the main point.

It is not to be expected that the initial method will be unalterable. It will undoubtedly be subject to whatever amendment practical operation may disclose to be necessary.

Neither the governor nor the industry can wait for a perfect scheme to be evolved ready for operation. Progress is not handed down ready made; it is the slow growing fruit of experiment and experience.

The big thing is to get started. That is the evident conclusion of the administration in approving the agreements as revised. There is no thought of there not being agreement. The program as evolved by the co-operation of the Planning and Co-ordination Committee and the oil administration was designed for immediate practical application and the administration is determined to have it put into operation.

It has been evident for some time that the seemingly interminable wranglings over the oil problem were likely to exhaust administrative patience. Other great industries went to Washington with a united front agreeing upon essentials and returning home to operate under a code. The oil industry, on the contrary, has been represented as torn by dissension and recrimination. Apparently the situation is now reaching a stage where a decision must be declared.

Administrator Ickes' statement indicates positively that agreements and contracts as revised are to become effective. It is this conviction which is at last strengthening the gasoline market after months of uncertainty.

The contract forms approved by the Planning and Co-ordination Committee, published in The Oil and Gas Journal last week and since undergoing revision by Administrator Ickes, offered substantial evidence of the measure of control about to be instituted. They brought theoretical discussion of what might happen at Washington down to black and white. The effect was to discourage skeptical influences which had been weakening the market.

At the same time it was a distinct encouragement to all those who have been hoping for constructive results at Washington. This feeling has been strengthened by announcements that the few days delay is due to technical revisions which will not vitally affect the agreements, and that there is complete understanding that the stabilization program is going through.

Action in East Texas

Announcement that Attorney General Cummings and Administrator Ickes have agreed upon a plan for prompt prosecution of violators of the code in East Texas without waiting for authorization from Washington in each case, followed a two weeks' visit of Chairman Fred M. Lege Jr., of the Texas Marketing Code Committee and a committee of five to inform Federal officials of actual conditions in East Texas.

The two special assistant United States attorneys general who have been busy in Texas are to be given a score of additional investigators and an immediate effort will be made, Mr. Ickes states, "to bring to task violators of the code and orders thereunder, engaged in producing, refining, transporting or marketing petroleum or any of its products."

This intensive drive by the Federal authorities will be of immediate interest following the report from Austin that in the nine months ending December 31 complaints of violating Texas Railroad Commission orders totaled 1,074 while suits for injunction were filed by the State attorney general as a result of these complaints in 306 cases.

This same report said "the same companies appear frequently as violators. Many of them pay little attention to injunctions." It remains to be seen whether Federal prosecutions will be as lightly regarded.

The new activity of the various State authorities in co-operating to run down offenders will help.

The continued production of "hot oil" in East Texas and the resulting traffic in gasoline below the market has been cited as an argument that the Federal attempt to stabilize the industry would fail. The new orders by Attorney General Cummings and Administrator Ickes will cut much of the red tape which has hampered Federal prosecution in East Texas and the dispatch of additional investigators suggests that whatever assistance may be needed will be forthcoming.

It is unquestionably true as Mr. Ickes says that "the basic opposition to the program for stabilization approved by the President and the oil industry comes from the ruthlessly selfish minority desirous only of gobbling up quick profits at the expense of fair minded honest operators."

The "very small minority of violators" upon whom the government has now declared war are to be taught that "this betrayal of the common welfare of an entire industry by an unprincipled minority cannot be tolerated, nor will it be."

That's the talk and, matched by aggressive action, as it no doubt now will be with the Department of Justice co-operating with the oil administration, there ought to be a speedy decision in East Texas.

There can be no effective stabilization of the oil industry until there is.

NRA MEMBER U.S. WE DO OUR PART

Why be "PENNY WISE" in Materials

—only to lose DOLLARS in repairs and leakage later?

THE savings it is possible to make initially, by using a cheaper joint, may look good on paper; but just a few faulty joints may quickly rub such "savings" out. Continual expense *following* installation can be avoided only by using the best, not the cheapest, joint construction at the start.

The true cost of any joint includes labor and material at the time of installation, plus leakage losses and maintenance expenses during the life of the line or main, plus the trouble and expense caused by service interruptions. *Use Dresser Couplings throughout for:* greatest speed of construction; permanent tightness; minimum expense for maintenance, repair, and leakage. Nearly half a century's field records show that factory-made Dresser joints eliminate the uncertainty of the human element . . . insure the *most economical* construction and operation.

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SAVE WITH DRESSER COUPLINGS

Group 3 Market Emerges From Dumps and Price Advances Are Recorded in Several Sections

By T. F. SMILEY

The gasolines, refinery and natural, in the Oklahoma (Group 3) territory emerged definitely this week from the dumps in which they had been bogged since last fall and assumed a lively air. Other sections of the market were in similar mood, particularly the bright stocks, which, emulating the example set by the neutrals the week before, moved into higher ground.

The vigorous upturn in the gasolines came with a suddenness that was almost startling to traders who had become apathetic through unrealized hopes.

The buoyancy of the refinery gasolines was directly traceable to developments in Washington, where indications point to early adjustment of matters in controversy in the proposed pooling and marketing agreements. Following a brief period of hesitancy refiners and distributors put a hopeful construction upon the situation as it is affected by the Government's participation in it and a distinctly firmer undertone appeared in the market, eventuating quickly in a stiffening of the price structure. An eighth to a quarter of a cent was added to quotations throughout the list, with no signs of reaction in sight.

Besides an increased feeling of assuredness that the market in petroleum products soon would be on a sounder basis as a result of government co-operation there were other circumstances contributing to the brighter outlook.

Improvement in East Texas

One of these factors was the improved situation in East Texas, where the defiant production and processing of hot oil long has been a demoralizing influence. Authorization of prosecutions against law violators without tedious communications with the attorney general's office in Washington seemed to have an immediate and wholesome effect for reports from the East Texas area indicate that there will be a drying up of the supply of illegally produced oil. So marked was the reduction in gasoline stocks there this week that some Oklahoma jobbers who habitually turn in that direction when seeking motor fuel at bargain prices did not even regard it as worth a long-distance telephone call to ask for quotations.

Further strengthening the East Texas situation is the assignment of 20 additional investigators to assist in the gathering of evidence against violators of the code. Delays consequent upon the lumbering character of legal machinery involved in building up cases against offenders has militated against efforts to clean up a vicious situation. The Government's recognition of this weakness and the steps it is taking to remedy it were among the heartening market developments of the week.

Rush to Get Under Wire

The demand upon Oklahoma refiners for gasoline was quickened too by the action of the Colorado legislature in slapping another tax of 1 cent on that product, making the total tax in that State 6 cents a gallon. The new act provides that the additional tax shall be imposed from February 1 to August 31. Jobbers throughout Colorado lost no time in filling their storage before the tax became effective.

Observers express the view that additional market strength now waits upon the more general entrance of jobbers and upon the three-judge decision to be handed down in the case attacking the constitutionality of the national petroleum code.

In some respects the course of the natural gasoline market was even more impressive than that of the refinery product. Conforming to the forecast of observers, the naturals, after touching the lowest point reached in their decline which began last November, underwent a pronounced tightening and began an upward movement which many believe will continue without serious interruption.

Such stocks of natural gasoline as were on hand a few weeks ago diminished rapidly under a buying movement in which there was participation from various quarters, and it was asserted by persons familiar with conditions that the stocks in the tanks of manufacturers and jobbers early this week were sufficient only to meet the normal demands of five or six days.

Usual Market Psychology Seen

Revealing the market psychology which has become traditional, traders in natural gasoline who had been sellers throughout the period of declining prices turned about quickly and became buyers with the first sign of rising prices, thus imparting impetus to the ascending movement. Refiners, anticipating the stronger demand for their kind of motor fuel, began giving instructions for shipment of natural gasoline on their contracts. Spot buying, too, was more brisk.

(Continued on Page 26)

Refined Oil Market Barometer

Gradually clearing skies are giving the general market a brighter aspect. Price stabilization through governmental co-operation is looked upon as a certainty of the near future, and the market tone reflects the conviction that refiners and distributors soon will enter upon an era of distinctly improved conditions. Both refinery and natural gasolines are showing increased strength, with higher quotations in several areas. Advances in neutrals and bright stocks in the Pennsylvania area have stiffened the market for these products in the Mid-Continent, with raised prices.

Mid-Continent—Price advances in both refinery and natural gasolines, also in bright stocks and heavy fuel oils. Wax strong. Rest of the market firm.

East Coast—General domestic market firm, with few price changes. Export gasoline market weak.

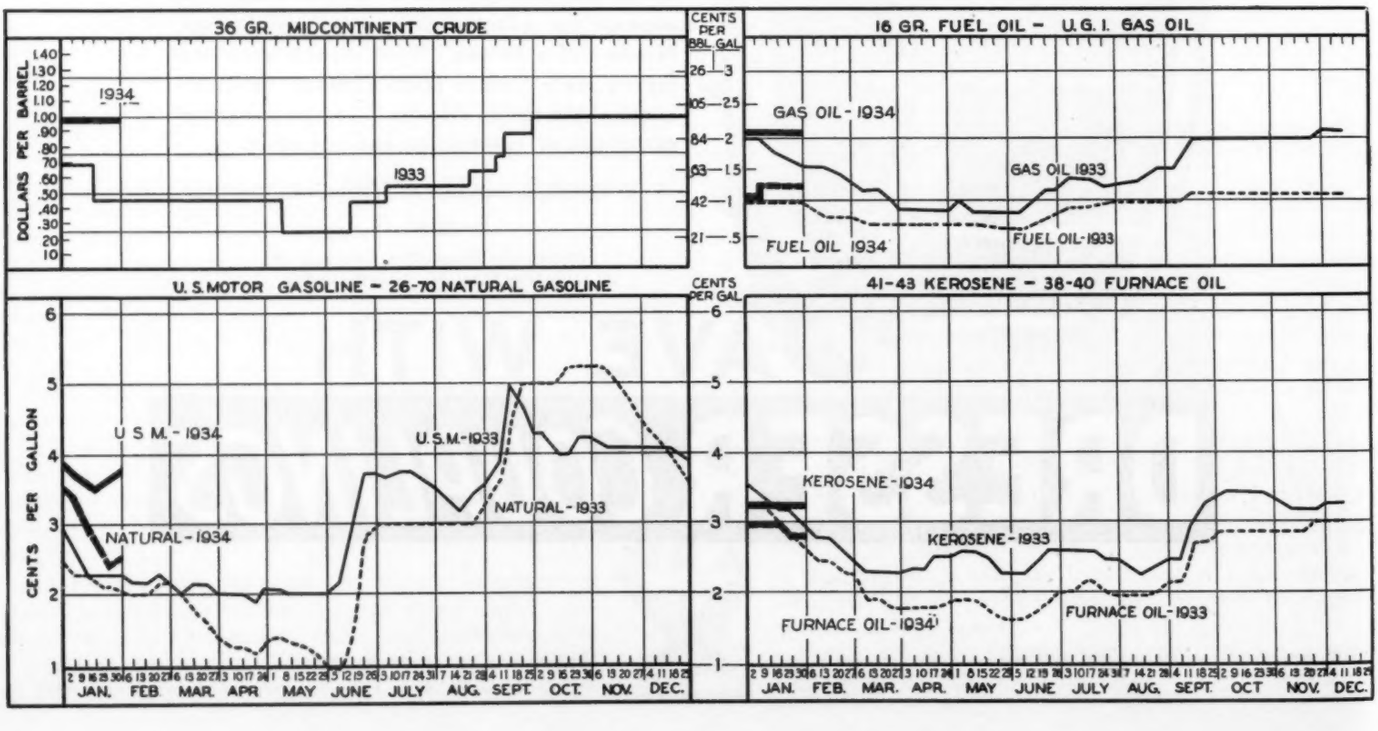
Gulf Coast—Gasolines firmer, with sellers holding out for better prices. Gas oil and fuels tight. Kerosenes scarce.

Pennsylvania—Demand for neutrals and continued good statistical position give these materials unusual strength. Bright stocks in secondary position.

California—No price changes and attention is centered upon a proposed cartel by which it is hoped to stabilize the gasoline market.

Chicago—Tank car gasoline market improved, with fractional price gains. Kerosene dull. Advance expected in retail motor oil prices.

Representative Mid-Continent Quotations on Crude Oil and Refined Products Basis Oklahoma (Group 3)



East Coast Interprets the Washington Program as Bullish Development in Motor Fuel Market

By C. O. WILLSON
New York Bureau, The Oil and Gas Journal

NEW YORK, Jan. 29.—Those connected with motor fuel markets in this territory both on the buying and selling sides are having difficulty interpreting the latest developments at Washington from the standpoint of the present and probable future price trends. Sellers were continuing to quote the tank car prices in effect since the early January reductions and say they do not expect to make any changes until the full significance of the Government's action in regard to the approval of a buying agency and the proposed standardization of marketing contracts are known.

On the whole it can be stated that the program approved at Washington is interpreted as a bullish development in the motor fuel market which will not only stop the recent trend toward lower price levels but will also enable the sellers shortly to recover the ground lost since the first of the year with still higher prices in prospect during February. There are, however, important exceptions to this optimistic attitude coming from those who doubt the practicability of the government plan which aims to stabilize markets through the absorption of distress gasoline by buying pools coupled with fixed or minimum margins to cover the jobber and retail distribution.

In expectation of better prices a few refiners along the East Coast and Gulf Coast are not actively soliciting new business and less complaint is heard of price concessions. The making of contracts was at a standstill over the past week, although many agreements between refiners and jobbers and between jobbers and dealers have been pending since the first of the year. It is known that many contracts involving important commercial business have been closed since the first of the year. It is said that the terms in some cases at least are on a more favorable basis to the buyer than are permitted under the new contracts proposed last week by the Government.

Under the oil administrator's order these contracts presumably will have to be cancelled. This situation is already said to have brought some objections to the plan from buyers who apparently are not going to be in a position to secure as favorable prices in their purchases as they have in the past. This is particularly important to the large commercial accounts. In addition to these buyers, considerable opposition is heard from certain jobbers and organizations purporting to represent thousands of dealers in this territory. This opposition, it is feared, may complicate the application of the Government's order. From the standpoint of the sellers every refiner in this territory is understood to have indicated its willingness to accept the major features of the plan without protest.

Gasoline Under 6 Cents

In the meanwhile low octane gasoline in New York Harbor is quoted at 5½ cents per gallon in tank car lots with 5¾ cents for the middle octane material and 6 cents for the premium octane grade. At least one refiner who had been quoting these prices on the middle and premium grades advanced his price one-fourth cent per gallon the latter part of last week. At the same time it is known that these prices have been shaded in small spot sales over the past week.

Expected Developments

The following briefly summarizes the expected developments of those who have expressed confidence in the success of the Government's latest effort to aid the oil business. It is said that the gasoline market will first strengthen in the Mid-Continent and Gulf Coast through the purchases of the buying agency established under the pooling agreement approved by the Government. Middle octane gasoline will return to a low around 5½ cents basis Oklahoma with the low octane material one-half cent per gallon less.

These advances in the Mid-Continent, it is contended, will be reflected immediately in the Gulf Coast area where buying by the pool will also take place. The assumption is that the low of the middle octane gasoline at the Gulf Coast will be around 6 cents per gallon with the low octane material at 5½ cents, an advance of at least 1 cent per gallon over the present market for coastwise movement. When this is accomplished refiners and bulk terminal operators in this territory will be in a position to advance their prices so that they will be in line with the Gulf Coast prices, taking into consideration the cost of transportation from the Gulf to the East Coast. This would mean a return to a bottom price of at least 6 cents at New York harbor points for low octane gasoline.

With this tank car basis established the tank wagon and service station prices would then be made effective in line with any marketing agreements covering margins to jobbers and dealers that are approved by the Government. The plan actually used in this territory by the major companies in establishing tank wagon and service station prices does not differ materially from that suggested by the Government. The trouble has been that a few companies ignored these basic principles based on cost of operation and brought confusion to the entire market structure. There are many practical difficulties to be overcome in applying this phase of the plan with a few skeptics at least who are confident "that it can't be done" with permanent success.

Export Gasoline

It is assumed that any improvement in the domestic market as outlined above will be carried over into the export gasoline market which is weak. The latter part of last week a local brokerage house sold two cargoes for February and March lifting to an English account at a price of 5¼ cents basis Gulf Coast for 64-66 375. This price was one-eighth cent lower than the low of the market the previous week.

This business was taken in competition with Rumanian quotations. Some of the larger factors in the export gasoline market have refused to quote under 5½ cents on spot business for the 64-66 375 endpoint grade and 5 cents for U. S. Motor. The latter grade, however, was quoted as low as 4¾ cents over the past week at the Gulf Coast. Refiners actively engaged in the export markets naturally would like to see this market show price improvement along with any change in the domestic market. What happens in this market will be dependent not only on the trend in domestic prices but also the support given to the program in this country by Russian and Rumanian sellers. It has been reported here that the export market might be used to absorb the gasoline which the buying agency will purchase from time to time to maintain stable prices in domestic markets. No such program has been indicated by those in charge of the pooling agency at Washington.

To Reduce Runs

If the Government's program in regard to gasoline production in February, including stocks at the end of the month, is carried out, additional reductions in crude runs to stills at eastern refineries will be necessary. The Government's plan for February permits East Coast refiners to produce 4,890,000 bbls. of gasoline or 175,000 bbls. daily. This means daily crude oil runs to stills of approximately 405,000 bbls. daily. Crude runs to stills the first 20 days of January averaged approximately 425,000 bbls. daily. January operations in regard to stocks in the East Coast for the first 20 days were in line with the Government's program announced in December

(Continued on Page 37)

American Petroleum Institute Weekly Refinery Statistics

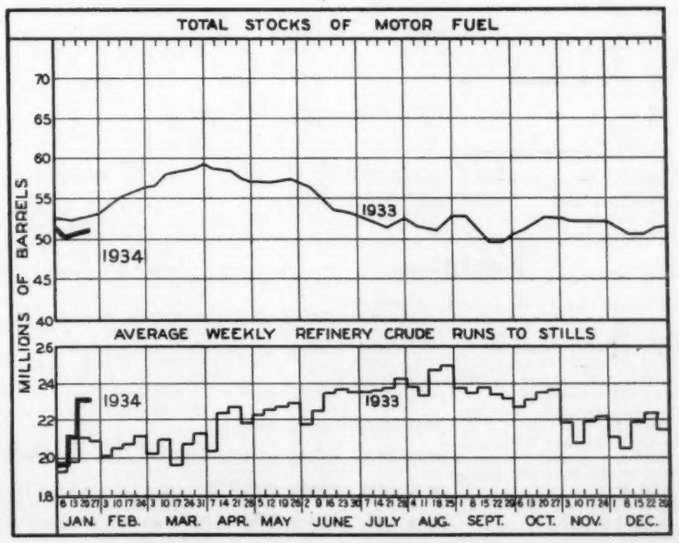
Figures below reported for week by American Petroleum Institute. (1) Per cent refinery capacity represented. (2) Daily average crude runs to stills. (3) Total motor fuel stocks. (4) Gas oil and fuel oil stocks. All figures in 42-gallon barrels.

Week Ending January 27, 1934, Compared to Week Ago

	Week Ending Jan. 20, 1934				Week ending January 20, 1934			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	477,000	13,934,000	5,473,000	100.0	481,000	13,693,000	5,694,000
Appalachian ...	92.6	88,000	1,933,000	913,000	92.6	86,000	1,941,000	860,000
Ind., Ill., Ky. ..	97.3	309,000	7,678,000	4,237,000	97.3	272,000	7,448,000	4,222,000
Okla., Kans., Mo	82.1	219,000	5,684,000	3,439,000	82.1	219,000	5,645,000	3,444,000
Inland Texas ..	60.2	87,000	1,204,000	1,610,000	60.2	85,000	1,218,000	1,634,000
Texas Gulf	98.1	440,000	5,379,000	5,593,000	98.1	479,000	5,550,000	5,632,000
La. Gulf	100.0	108,000	1,706,000	1,920,000	100.0	110,000	1,445,000	1,997,000
N. La. and Ark.	92.6	51,000	229,000	536,000	92.6	53,000	197,000	526,000
Rocky Mtn.	78.8	26,000	990,000	715,000	78.8	35,000	987,000	712,000
California	96.9	414,000	11,492,000	90,661,000	96.9	436,000	13,558,000	91,118,000
Total U. S. ...	92 4	2,219,000	50.229,000	115,097,000	92.4	2,256,000	51,682,000	115,839,000

Week Ending January 27, 1934, Compared to Year Ago

	Week Ending Jan. 20, 1934				Week ending January 28, 1933			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	477,000	13,934,000	5,473,000	99.1	472,000	12,885,000	7,835,000
Appalachian ...	92.6	88,000	1,933,000	913,000	95.0	81,000	1,875,000	933,000
Ind., Ill., Ky. ..	97.3	309,000	7,678,000	4,237,000	97.5	300,000	7,396,000	2,344,000
Okla., Kans., Mo.	82.1	219,000	5,684,000	3,439,000	84.9	195,000	4,882,000	2,895,000
Inland Texas ..	60.2	87,000	1,204,000	1,610,000	56.4	82,000	1,524,000	2,248,000
Texas Gulf	98.1	440,000	5,379,000	5,593,000	97.7	416,000	6,281,000	6,456,000
La. Gulf	100.0	108,000	1,706,000	1,920,000	97.3	87,000	1,532,000	2,384,000
N. La. and Ark.	92.6	51,000	229,000	536,000	88.5	40,000	304,000	503,000
Rocky Mtn.	78.8	26,000	990,000	715,000	90.8	32,000	1,250,000	495,000
California	96.9	414,000	11,492,000	90,661,000	94.6	393,000	15,282,000	99,116,000
Total U. S. ...	92 4	2,219,000	50.229,000	115,097,000	91.6	2,098,000	53,211,000	126,209,000



Data based on weekly reports of American Petroleum Institute. Figures for week just ended not shown in graph but are included in accompanying table.

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement except as otherwise noted

The following quotations are exclusive of the Federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasolines

	Jan. 30		Jan. 23	
OKLAHOMA (Group 3)—				
U. S. Motor grades:				
Below 60 octane	.03⅞	.04	.03⅝	.03⅞
60-64.9 octane	.04½	.04¾	.04⅜	.04⅝
65-70 octane	.04⅞	.05	.04¾	.05
60-62 400 grades:				
Below 60 octane	.04	.04⅛	.03⅞	.04
60-64.9 octane	.04¾	.05	.04⅝	.05
65-70 octane	.05	.05¼	.05	.05¼
64-66 375	.04½	.04⅝	.04¼	.04⅜
68-70 360	.04⅞	.05⅛	.04¾	.05
NORTH TEXAS—				
U. S. Motor grades:				
Below 60 octane	.03¾	.03⅞	.03⅝	.03¾
60-64.9 octane	.04½	.04¾	.04⅜	.04⅝
65-70 octane	.04¾	.05	.04¾	.05
60-62 400	.04	.04⅛	.03⅞	.04
64-66 375	.04⅜	.04½	.04⅛	.04¼
68-70 360	.04⅞	.05	.04¾	.05
NORTH LOUISIANA (Ark., No. La. & Miss. del.)—				
U. S. Motor grades:				
Below 60 octane	.04⅜		.04⅛	.04⅜
60-64.9 octane	.05⅜		.05	.05¼
65-70 octane	.05⅝		.05½	
60-62 400	.04⅜		.04¼	
ARKANSAS (Ark., No. La. & Miss. del.)—				
U. S. Motor grades:				
Below 60 octane	.04⅜		.04⅛	.04⅝
60-64.9 octane	.05⅜		.05	.05¼
65-70 octane	.05⅝		.05½	
CHICAGO (based on Oklahoma Group 3)—				
U. S. Motor grades:				
Below 60 octane	.03⅞	.04	.03¾	.04
60-64.9 octane	.04⅞	.05	.04⅝	.04⅞
65-70 octane	.05	.05¼	.05	.05⅛
60-62 400	.03⅞	.04⅛	.03⅞	.04
64-66 375	.04⅝	.05	.04⅝	.05
68-70 360	.05	.05¼	.05	.05¼
Aviation fighting grade	.05⅜	.05⅝	.05¼	.05¾
PENNSYLVANIA (inland refineries)—				
58-60 U. S. Motor:				
Below 60 octane	.05	.05¼	.05	.05¼
60-64.9 octane	.06⅜	.06½	.06⅜	.06½
65-70 octane	.06¾	.07¼	.06¾	.07
64-66 375	.06	.06⅛	.06	.06⅛
68-70 350	.06¼	.06½	.06¼	.06½
CALIFORNIA (domestic movement)—				
54-58 U. S. Motor	.08	.09	.08	.09
58-60 400	.09	.10	.09	.10
EAST COAST—				
U. S. Motor, below 60 octane:				
New York	.05½		.05½	
Baltimore	.05½		.05½	
U. S. Motor, 60-64 octane:				
New York (Bavonne)	.05¾		.05¾	
Philadelphia	.05¾	.06	.05¾	.06
Boston	.06	.0620	.06	.0620
Baltimore	.05¾		.05¾	
Charleston, S. C.	.05¾		.05¾	
U. S. Motor, 65 and above:				
New York (Bayonne)	.06		.06	
Philadelphia	.06	.06¼	.06	.06¼
Boston	.06¼	.0645	.06¼	.0645
Baltimore	.06		.06	
Charleston, S. C.	.06		.06	
GULF COAST (domestic)—				
U. S. Motor:				
Below 60 octane	.04⅝	.04¾	.04½	
60-64.9 octane	.05	.05½	.04⅞	.05⅛
65 octane and higher	.05¼	.05½	.05¼	.05½

Naphthas

	Jan. 30		Jan. 23	
PENNSYLVANIA (inland refineries)—				
50-52 430-450 (blending)	.04⅞	.05		
52-54 430-450 (blending)	.05	.05⅛	.05⅛	
54-56 430-450 (blending)	.05⅛	.05¼		
CHICAGO (based on Oklahoma Group 3)—				
50-52 450 (blending)	.03¾	.04¼	.03¾	.04
Cleaners' naphtha, 56-58 gr., 200 i.b.p.-330 e.p.	.06½	.06¾	.06½	.06¾
Lacquer diluent, 180 i.b.p.-250 e.p.	.07½	.07¾	.07½	.07¾
Lacquer diluent, 140 i.b.p.-200 e.p.	.08½	.08¾	.08½	.08¾
Rubber solvent, 68-70 gr., 100 i.b.p.-300 e.p.	.06½	.06¾	.06½	.06¾
Stoddard solvent, 300 i.b.p.-410 e.p., over 83° flash	.06	.06¼	.06	.06¼
Pet. thinner, 290-300 i.b.p.-415 e.p., over 83° flash	.06	.06½	.06	.06½
V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p.-330 e.p.	.06½	.06¾	.06½	.06¾
Petroleum spirits	.05½	.05¾	.05½	.05¾

Natural Gasolines

	Jan. 30		Jan. 23	
OKLAHOMA (Group 3)—				
Grade 26-70	.02½	.02⅝	.02⅜	.02½
Grade 18-55	.03⅛	.03¼	.03	
Low vapor pressure grades:				
15 lb. v.p. (max.)	.03½	.03¾	.03¼	
11 lb. v.p. (max.)	.04	.04½	.03¾	.04
NORTH TEXAS—				
Grade 26-70	.02½	.02⅝	.02⅜	.02½
Grade 18-55	.03⅛	.03¼	.03	
Low vapor pressure grades:				
15 lb. v.p. (max.)	.03⅝	.03¾	.03¼	
11 lb. v.p. (max.)	.04	.04¼	.03¾	.04
NORTH LOUISIANA—				
Grade 26-70	.02⅞	.03	.02¾	
CALIFORNIA—				
75-85 375	.06	.07	.06	.07

Kerosenes

(All kerosenes water white)

	Jan. 30		Jan. 23	
OKLAHOMA (Group 3)—				
41-43	.03¼	.03½	.03¼	.03½
42-44	.03½	.03⅝	.03½	.03⅝
NORTH TEXAS—				
40-41	.03⅛	.03¼	.03⅛	.03¼
41-43	.03¼	.03⅜	.03¼	.03⅜
NORTH LOUISIANA (Ark., No. La. & Miss. del.)—				
41-43	.03¾		.03¾	
42-44	.04		.04	
ARKANSAS (Ark., No. La. & Miss. del.)—				
41-43	.03¾		.03¾	
PENNSYLVANIA (inland refineries)—				
45	.04¼	.04½	.04¼	.04½
46	.04½	.04¾	.04½	.05
47	.04¾	.05	.04¾	.05
CHICAGO (based on Oklahoma Group 3)—				
41-43	.03¼	.03½	.03¼	.03½
42-44	.03⅜	.03½	.03⅜	.03½
CALIFORNIA (Pacific Coast consumption)—				
38-40 high burning test	.04¼	.04¾	.04¼	.04¾
NEW YORK (Bayonne, N. J.)—				
41-43	.05¼	.05½	.05¼	.05½
GULF COAST (domestic)—				
41-43	.04½	.04⅝	.04½	.04⅝

Petroleum Coke

(Prices per ton f.o.b. refineries in Chicago area.)
(Refineries will absorb freight to 80 cents a ton)

	Jan. 30	Jan. 23
Breeze (screenings)	5.50	5.50
Pile run	5.50	5.50
Direct from still	6.50	6.50
Lump and egg	8.00	8.00

Furnace Oils and Tractor Fuels

(Zero cold test under 190° flash and good odor)

	Jan. 30		Jan. 23	
OKLAHOMA (Group 3)—				
32-36 straw	.02⅞	.03	.02⅞	.03
36-38 straw	.02⅝	.02⅞	.02⅝	.02⅞
38-40 straw	.02⅞	.03	.02⅞	.03
39-41 prime	.03	.03⅛	.03	.03⅛
NORTH TEXAS—				
38-40 straw	.02¾	.03	.02¾	.03
NORTH LOUISIANA (Ark., No. La. & Miss. del.)—				
36-40 furnace oil	.03		.03	
ARKANSAS (Ark., No. La. & Miss. del.)—				
32-36 furnace oil	.03		.03	
CHICAGO (based on Oklahoma Group 3)—				
32-36 straw	.03⅛	.03¼	.03⅛	.03¼
38-40 straw	.03⅛	.03¼	.03⅛	.03¼
38-40 prime white	.03¼	.03⅜	.03¼	.03⅜
PENNSYLVANIA (inland refineries)—				
40-41 prime white	.03⅞	.04⅛	.03⅞	.04⅛
NEW YORK (Bayonne, N. J.)—				
36-40 (No. 1 grade)	.05¼	.05½	.05¼	.05½
32-36 (No. 2 grade)	.04½		.04½	
21 industrial (No. 4 grade)	.04		.04	

Gas Oil, Diesel Oil and Fuel Oil

(Gas oil per gal.; Diesel and fuel oils per bbl.)

	Jan. 30		Jan. 23	
OKLAHOMA (Group 3)—				
32-36 gas oil cracking stock	.01⅞	.02⅛	.01⅞	.02⅛
U.G.I. gas oil	.02⅛		.02⅛	
32-36, zero to 15 gas oil	.02⅞	.03	.02⅞	.03
28-30, No. 3 burner oil	1.05	1.10	1.05	1.10
28-30, zero to 10 fuel oil	.95	1.00	.95	1.00
26-30, zero to 10 fuel oil	.85	.95	.85	.95
24-26 fuel oil	.70	.75	.65	.70
20-22 fuel oil	.57½	.65	.55	.60
Below 16 fuel oil	.55	.60	.55	.60
NORTH TEXAS—				
32-36 gas oil, industrial	.02		.02	
22-26 fuel oil	.57½	.62½	.57½	.62½
Below 20 fuel oil	.47½	.50	.47½	.50
NORTH LOUISIANA (Ark., No. La. & Miss. del.)—				
32-36 gas oil, zero	.03		.03	
14-16 fuel oil	.65	.70	.65	.70
ARKANSAS (Ark., No. La. & Miss. del.)—				
30-32 gas oil, zero	.02¾		.02¾	
32-36 gas oil	.03		.03	
14-16 fuel oil	.65	.70	.65	.70
CHICAGO (based on Oklahoma Group 3)—				
32-36 gas oil, industrial	.01⅞	.02	.01⅞	.02
28-30 zero to 10, fuel oil	1.00	1.07½	1.00	1.07½
26-28 zero to 10, fuel oil	.87½	.92½	.87½	.92½
22-26 zero to 10, fuel oil	.77½	.82½	.77½	.82½
18-22 zero to 10, fuel oil	.60	.65	.60	.65
Below 18 fuel oil	.40	.45	.40	.45

Note: Fuel oils of more than 40 cold test generally 5 to 15 cents per barrel less in all these areas.

PENNSYLVANIA (inland refineries)—				
36-40	.03¾	.04	.03¾	.04
CALIFORNIA—				
30-34 gas oil per bbl.	1.05	1.15	1.05	1.15
27 plus Diesel	1.05	1.15	1.05	1.15
15-19 bunker (at tidewater)	.60	.70	.60	.70
15-19 (cargo lots)	.55	.65	.55	.65
15-19 (tank cars)	.45	.65	.45	.65
GULF COAST—				
28-30 gas oil	.03¾		.03¾	
28-30 Diesel (bunkers)	1.80		1.80	
Bunker C (bulk cargoes)	.92½	.95	.92½	.95
NEW YORK (Bayonne, N. J.)—				
28 plus, gas oil	.04¼	.04½	.04¼	.04½
28-30 Diesel (lighterage 6½ cents per bbl.)	1.95		1.95	
28-30 Diesel (tank cars)	.04½		.04½	
*Bunker C (to ocean-going ships in N. Y. harbor	1.20		1.20	

*Lighterage charge 5 cents per barrel additional.

Neutral Oils

(Vis. at 100° F. except Pennsylvania, and color N.P.A.)

	Jan. 30		Jan. 23	
OKLAHOMA (Group 3)—				
Zero to 10 Cold Test:				
150-3	.07¾	.08	.07¾	.08
180-3	.09	.09¼	.09	.09¼
180-4	.08¾	.09	.08¾	.09
200-3	.09¼	.09¾	.09½	.09¾
200-4	.09¼	.09½	.09¼	.09½
240-3	.11½	.11¾	.11½	.11¾
240-4	.11¼	.11½	.11¼	.11½
280-3	.12½	.12¾	.12½	.12¾
280-4	.12	.12¼	.12	.12¼
300-3½	.13¼	.13½	.13¼	.13½
350-3½	.14¼	.14½	.14¼	.14½
400-4	.15¼	.15½	.15¼	.15½
500-4½	.16¼	.16½	.16¼	.16½
100-2 paraffin oil	.05½	.05¾	.05½	.05¾
15-30 Cold Test:				
200-3	.08½	.08¾	.08½	.08¾
200-4	.08¼	.08½	.08¼	.08½
240-3	.10½	.10¾	.10½	.10¾
240-4	.10¼	.10½	.10¼	.10½
280-3	.11½	.11¾	.11½	.11¾
280-4	.11¼	.11½	.11¼	.11½
GULF COAST—				
Pale Oils:				
200-3	.07½		.07½	
300-3	.08	.08¼	.08	.08¼
500-3½	.09	.09¼	.09	.09¼
750-3½	.09½	.09¾	.09½	.09¾
1,200-3½	.10	.10¼	.10	.10¼
2,000-4	.10½	.10¾	.10½	.10¾
Red Oils:				
200-5-6	.06½		.06½	
300-5-6	.07	.07¼	.07	.07¼
500-5-6	.08	.08¼	.08	.08¼
750	.08½	.08¾	.08½	.08¾
1,200-5-6	.09	.09¼	.09	.09¼
2,000-6 plus	.09½	.09¾	.09½	.09¾
CALIFORNIA—				
Pale Oils:				
100-2½-3	.23	.25	.23	.25
200-2½-3	.23	.25	.23	.25
300-3-3½	.23	.25	.23	.25
350-3-4	.23	.25	.23	.25
400-3-4	.23	.25	.23	.25
450-3-4	.23	.25	.23	.25

550-3-4	.23	.25	.23	.25
600-3-4	.23	.25	.23	.25
Red Oils:				
200-4-5	.23	.25	.23	.25
300-5-6	.23	.25	.23	.25
350-5-6	.23	.25	.23	.25
400-5-6	.23	.25	.23	.25
450-5-6	.23	.25	.23	.25
500-5-6	.23	.25	.23	.25
600-5-6½	.23	.25	.23	.25
700-6½ plus	.23	.25	.23	.25
750-6½ plus	.23	.25	.23	.25
900-6½ plus	.23	.25	.23	.25
PENNSYLVANIA—				
150 vis. at 70° F., 3 color; 400-405 flash:				
Zero pour test	.23½	.24	.23½	.24
10 pour test	.22½	.23	.22½	.23
15 pour test	.22	.22½	.22	.22½
25 pour test	.21	.21½	.21	.21½
180 vis. at 70° F., 3 color:				
25 pour test	.25	.25½	.25	.25½
200 vis. at 70° F., 3 color:				
Zero pour test	.30	.30½	.30	.30½
10 pour test	.28½	.29	.28½	.29
15 pour test	.28	.28½	.28	.28½
25 pour test	.27½	.28	.27½	.28

Bright and Steam Refined Stocks

OKLAHOMA (Group 3)—	Jan. 30		Jan. 23	
630 light green	.15		.11	.14
600 light green S.R.	.07	.09	.07	.09
600 dark green S.R.	.05	.07	.05	.07
Bright Stocks:				
190-200 D	.26½		.24	.25
150-160 D, 0-10	.23¾		.22¼	.22½
150-160 D, 10-25	.23¼		.21¾	
150-160 D, 25-40	.22¾		.21¼	
150-160 E	.22¾		.21¼	
PENNSYLVANIA—				
600 S.R.	.18½	.19	.18½	.19
650 S.R.	.21	.21½	.20½	.21
600 Pennsylvania flash	.22	.22½	.21½	.22
630 flash	.26½	.27	.26	.26½
600 Warren E filtered	.21½	.22	.21½	.22
Pennsylvania Grade bright stock:				
No. 8 color, 145-50 at 210; 540-550 flash:				
10 pour test	.29	.29½	.29	.29½
15 pour test	.28½	.29	.28½	.29
20 pour test	.28	.28½	.28	.28½
25 pour test	.27½	.28	.27½	.28

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—	Jan. 30		Jan. 23	
124-126 white crude scale	.03¾	.03⅞	.03¾	.03⅞
PENNSYLVANIA—				
122-124	.04	.0405	.04	.0405
124-126	.0405	.0410	.0405	.0410
NEW YORK HARBOR—				
Wax (a.m.p.) in bags:				
120-122	.0430		.0430	
123-125	.0445		.0445	
125-127	.0455		.0455	
130-132	.0495		.0495	
133-135	.0555		.0555	
135-137	.0580		.0580	
124-126 crude scale	.03⅞	.04	.03⅞	.04
Petrolatum in barrels in carload lots:				
Dark green	.01⅞	.02	.01⅞	.02
Amber	.02⅞	.03	.02⅞	.03
Extra amber	.03¼	.03¼	.03¼	.03¼
Lily white	.06¾	.06⅞	.06¾	.06⅞
Snow white	.07¾	.07⅞	.07¾	.07⅞
Cream	.05⅝	.05¾	.05⅝	.05¾
CHICAGO (f.o.b. switching district)*—				
122-124 wax	.0465	.0475	.0465	.0475
125-127 wax	.0490	.0500	.0490	.0500
127-129 wax	.0505	.0515	.0505	.0515
130-132 wax	.0565	.0575	.0565	.0575
132-134 wax	.0590	.0600	.0590	.0600

*Cents per pound on carlot orders in burlap bags of 225 lbs. approx. Add 3° F., a.m.p.

Export Prices

GASOLINE				
GULF COAST—	Jan. 30		Jan. 23	
U. S. Motor	.04¾	.05	.04⅞	.05
60-62 400	.05⅛		.05⅛	.05¼
61-63 390	.05⅛	.05¼	.05¼	.05⅜
64-66 375	.05¼	.05⅜	.05⅜	.05½
LOS ANGELES, CALIF.—				
U. S. Motor grades:				
53-55 octane	.04¼	.04½	.04¼	.04½
55-65 octane	.04½	.04¾	.04½	.04¾
65-67 octane	.04¾	.05	.04¾	.05
67-69 octane	.05	.05¼	.05	.05¼
Above 69 octane	.05¼	.05¾	.05¼	.05⅜
58-60 400 endpoint	.05	.05¾	.05	.05¾
KEROSENE				
GULF COAST—				
41-43 prime white	.04¼		.04¼	.04⅜
41-43 water white	.04¼	.04⅜	.04⅜	.04½
44 water white	.04½	.04⅝	.04⅝	
LOS ANGELES, CALIF.—				
41-43 water white	.04	.04½	.04	.04½
LUBRICANTS				
NEW YORK (f.a.s. in bbls.)—				
Cylinder Stocks:				
600 Warren E	.28	.29	.27	.28
600 S.R. unfiltered	.24½	.25½	.23½	.24½
650 S.R. unfiltered	.27½	.28½	.26½	.27½
600 flash S.R.	.28½	.29	.27½	.28½
630 flash S.R.	.32½	.33	.31½	.32½
Bright stock, 8 color	.34	.35	.33	.34
Bright stock, 6½ plus, dil.	.33	.34	.32	.33
NEUTRAL OILS				
200-3 color	.32	.33	.31	.32
150-3 color	.28	.28½	.27	.28
PARAFFIN WAX (Fully Refined)				
NEW YORK (prices per pound)—				
120-122 a.m.p.	.04¼	.04⅜	.04¼	.04⅜
123-125 a.m.p.	.04⅜	.04½	.04⅜	.04½
125-127 a.m.p.	.04½	.04⅝	.04½	.04⅝
130-132 a.m.p.	.05	.05⅛	.05	.05⅛
133-135 a.m.p.	.05½	.05⅝	.05½	.05⅝
135-137 a.m.p.	.05¾	.06⅛	.05¾	.05⅞

Crude Oil Gravity Table

Degrees gravity—	1 Oklahoma and Kansas	2 North Texas, Central Texas and East Central Texas	3 North Louisiana and Arkansas	4 Gray County, Texas	5 Carson, Hutchinson and Moore Counties, Texas	6 Conroe, Texas	7 Salt Creek, Wyo.	8 Gulf Coast, Texas and Louisiana	9 Gulf Coast, Texas and Louisiana	10 Caddo, Louisiana	11 Sabine-De Soto, Louisiana	12 Homer, Louisiana	13 Sarepta-Carterville, Louisiana	14 El Dorado, Arkansas	15 Haynesville, Louisiana	16 Miller County, Arkansas	17 Cotton Valley, Louisiana
Below 20	....	....	....	....	....	....	....	$.82	$.82	....	....	....	....	....	....	....	....
20-20.9	....	....	....	....	....	....	....	.84	.84	....	....	....	....	....	....	....	....
21-21.9	....	....	....	....	....	....	....	.86	.86	....	....	....	....	....	....	....	....
22-22.9	....	....	....	....	....	....	....	.88	.88	....	....	....	....	....	....	....	....
23-23.9	....	....	....	....	....	....	....	.90	.90	....	....	....	....	....	....	....	....
24-24.9	....	....	....	....	....	....	....	.92	.92	....	....	....	....	....	....	....	....
Below 25	*$.76	....	....	....	....	....	....	....	....	$.63	$.69	$.71	$.75	$.75	$.65	$.62	$.70
25-25.9	*.78	....	....	....	....	....	....	.94	.94	.65	.71	.73	.77	.77	.67	.64	.72
26-26.9	*.80	....	....	....	....	....	....	.96	.96	.67	.73	.75	.79	.79	.69	.66	.74
27-27.9	*.82	....	....	....	....	....	....	.98	.98	.69	.75	.77	.81	.81	.71	.68	.76
28-28.9	*.84	....	....	....	....	....	....	1.00	1.00	.71	.77	.79	.83	.83	.73	.70	.78
Below 29	.84	$.79	0.79	....	....	....	$.84	....	....	....	....	....	....	....	....	....	....
29-29.9	.86	.81	.81	....	....	....	.86	1.02	1.02	.73	.79	.81	.85	.85	.75	.72	.80
30-30.9	.88	.83	.83	....	....	....	.88	1.04	1.04	.75	.81	.83	.87	.87	.77	.74	.82
31-31.9	.90	.85	.85	....	....	....	.90	1.06	1.06	.77	.83	.85	.89	.89	.79	.76	.84
32-32.9	.92	.87	.87	....	....	....	.92	1.08	1.08	.79	.85	.87	.91	.91	.81	.78	.86
33-33.9	.94	.89	.89	....	....	....	.94	1.10	1.07	.81	.87	.89	.93	.93	.83	.80	.88
34-34.9	.96	.91	.91	....	....	....	.96	1.12	1.08	.83	.89	.91	.95	.95	.85	.83	.90
Below 35	....	....	....	$.79	$.69	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	.98	.93	.93	.81	.71	$1.09	.98	1.12	1.09	.85	.91	.93	.97	.97	.87	.84	.92
36-36.9	1.00	.95	.95	.83	.73	1.11	1.00	1.12	1.10	.87	.93	.95	.99	.99	.89	.86	.94
37-37.9	1.02	.97	.97	.85	.75	1.13	1.02	1.12	1.11	.89	.95	.97	1.01	1.01	.91	.88	.96
38-38.9	1.04	.99	.99	.87	.77	1.15	1.04	1.12	1.12	.91	.97	.99	1.03	1.03	.93	.90	.98
39-39.9	1.06	1.01	1.01	.89	.79	1.17	1.06	1.12	1.13	.93	.99	1.01	1.05	1.05	.95	.92	1.00
40 and over	1.08	1.03	1.03	.91	.81	1.19	1.08	1.12	1.14	.95	1.01	1.03	1.07	1.07	.97	.94	1.02

*The following companies purchasing crude oil in Kansas or Oklahoma, or both, begin their price schedules: Below 25 degrees, 76 cents; 25-25.9 degrees, 78 cents, with 2 cents added for each degree upward to 40 and over at $1.08: Carter Oil Co., Magnolia Petroleum Co., Pure Oil Co., Rock Island Refining Co., Shell Petroleum Corp., Sinclair Prairie Oil Marketing Co., Skelly Oil Co. and Wilcox Oil & Gas Co. All others begin their schedule at below 29 degrees, 84 cents, excepting Philtex Oil Co., which begins with below 31 degrees at 88 cents.

Column 1—Effective September 29, The Texas Co. in Oklahoma; Stanolind Crude Oil Purchasing Co. in Kansas and Oklahoma; Anderson & Prichard, Inc., in Oklahoma; Bell Oil & Gas Co. in Oklahoma; Carter Oil Co. in Oklahoma and Kansas; Deep Rock Oil Co. in Oklahoma; Derby Oil Co. in Kansas; Globe Refining Co. in Oklahoma; Golden Rule Refining Co. in Kansas; Gypsy Oil Co. in Oklahoma and Kansas; Kanotex Refining Co. in Kansas; Magnolia Petroleum Co. in Oklahoma; Mid-Continent Petroleum Corp. in Oklahoma; National Refining Co. in Kansas and Oklahoma; Shell Petroleum Corp in Kansas and Oklahoma; Sinclair Prairie Oil Marketing Co. in Kansas and Oklahoma; The Texas Co. in Oklahoma; Tide Water Oil Co. in Oklahoma; Vickers Refining Co. in Kansas; Continental Oil Co. in Kansas and Oklahoma; Empire Pipe Line Co. in Oklahoma and Kansas; Philtex Oil Co. in Kansas and Oklahoma; Pure Oil Co. in Oklahoma; Skelly Oil Co. in Kansas. Effective September 29, by White Eagle Oil Corp. in Kansas; on October 1 by Barnsdall Refineries, Inc., in Oklahoma.

Column 2—Effective September 29, by the Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Bell Oil & Gas Co., Continental Oil Co. Effective September 29 in the Van Pool, Van Zandt County, the Pure Oil Co. posted below 29 degrees, 84 cents, with 2 cents added for each degree up to 40 and over at $1.08.

Column 3—Effective September 29 by the Texas Co., Magnolia Petroleum Co., Gulf Refining Co. Effective December 22, Stanolind Oil & Gas Co. in Pine Island, Louisiana, and Marion County, Texas, posted below 29 degrees, 79 cents, with 2 cents added for each degree up to 40 and over at $1.03. For Standard Oil Co. of Louisiana's prices see Columns 10 to 16, inclusive.

Column 4—Effective September 29 by the Texas Co., Humble Oil & Refining Co., Magnolia Petroleum Co., Sinclair Prairie Oil Marketing Co. and H. F. Wilcox Oil & Gas Co. On same day Philtex Oil Co. posted below 31 degrees, 71 cents, with 2 cents added for each degree up to 40 and over at 91 cents.

Column 5—Effective September 29 by the Texas Co., Humble Oil & Refining Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Wilcox Oil & Gas Co., Continental Oil Co. On same day, Philtex Oil Co. posted below 31 degrees, 61 cents, with 2 cents added for each degree upward to 40 and over at 81 cents.

Column 6—Effective September 29 by the Humble Oil & Refining Co. and Tide Water Oil Co., and on September 30 by the Texas Co. which on September 29 had posted a schedule of $1.07 to $1.12, with a 1-cent spread on each degree.

Column 7—Effective September 29 by the Stanolind Oil & Gas Co.

Column 8—Effective September 29 by the Humble Oil & Refining Co., Gulf Pipe Line Co., Shell Petroleum Corp., Pure Oil Co., Sinclair Prairie Oil Marketing Co. On October 2, Magnolia Petroleum Co. posted Lockport, Louisiana: 20-20.9 degrees, 84 cents, with 2 cents added for each degree upward to 34 and over at $1.12, and in Cameron Meadows and Iowa, Louisiana: Below 20 degrees, 73 cents with 2 cents added for each degree up to 34 and over at $1.02. These prices were 2 cents higher on each degree than Magnolia prices posted on September 29. Effective September 29, Shell Petroleum Corp. posted in Iowa, Louisiana, district: Below 20 degrees, 70 cents, with 2 cents added for each degree upward to 34 degrees and over at $1.00; and in Black Bayou and White Castle, Louisiana: Below 20 degrees, 80 cents, with 2 cents added for each degree upward to 34 degrees and over at $1.10.

Column 9—Effective September 30, the Texas Co. (On September 29, the Texas Co. had posted a schedule 2 cents lower on each degree, but changed it on September 30.)

Columns 10, 11, 12, 13, 14, 15, 16—Effective September 29, by the Standard Oil Co. of Louisiana and Louisiana Oil Refining Co.

Column 17—Effective September 29, by the Louisiana Oil Refining Co.

(California Crude Oil Prices on Page 33)

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas	$1.00
Stratman, Kans. (Sept. 29, 1933)	1.08
Corsicana (heavy) (June 17, 1933)*	.50
Other fields	(See gravity table)

Note—In East Texas, effective September 29, 1933, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Shell Petroleum Corp., Gulf Pipe Line Co., Tide Water Oil Co., Sinclair Prairie Oil Marketing Co., Magnolia Petroleum Co., Sun Oil Co., Panola Pipe Line Co., and Empire Oil & Refining Co.

*Magnolia Petroleum Co.

West Texas

Crane, Upton, Crockett, Howard, Glasscock, Mitchell (Sept. 29, 1933)	$ 70
Ector, Winkler and Pecos Counties and Lea County, New Mexico (Sept. 29, 1933)	.75
Pecos County, Yates shallow pool (Sept. 29, 1933)*	.65
Jones and Fisher Counties	See gravity table.

Note—Effective September 29, 1933, by Humble Oil & Refining Co., Texas Co., Gulf Pipe Line Co., Shell Petroleum Corp., Magnolia Petroleum Co., and by Stanolind Oil & Gas Co. in Winkler County, Texas.

*Shell Petroleum Corp.

Gulf Coast

Grade A and Grade B specifications discontinued by leading buyers. (See gravity table)

Tomball (see note)*	$1.15
Livingston (Sept. 29, 1933)†	1.00
Cleveland (Jan. 11, 1934)	1.00
Greta (Sept. 29, 1933)	.85
Refugio, light	(See gravity table)
Refugio, heavy (Sept. 29, 1933)‡	.85
Markham and High Island	(See Gulf Coast gravity table)
Conroe	(See Conroe gravity table)

Note—Tomball, effective September 29, by Humble Oil & Refining Co., and October 2 by Magnolia Petroleum Co., and November 10 by Stanolind Oil & Gas Co.

*Greta posted by Texas Co. †Shell Petroleum Corp. ‡Refugio heavy, by Humble Oil & Refining Co. Cleveland (Liberty County), posted by Magnolia Petroleum Co.

South Central and Southwest Texas

(See note below table)

Darst Creek	.87
Mirando	.80
Luling (Sept. 29, 1933)	.75
Pettus	1.05
Salt Flat	.87
Lytton Springs (Sept. 29, 1933)	.95
Duval County (Sept. 29, 1933)	.80
Saxet	.95

Note—Effective on September 29 by Humble Oil & Refining Co. in Darst Creek, Mirando, Pettus, Salt Flat and Saxet. Effective September 29 in Darst Creek by Gulf Pipe Line Co. and Texas Co. Effective October 2 by Magnolia Petroleum Co. Effective in Pettus and Salt Flat on September 29 by Humble Oil & Refining Co. and Gulf Pipe Line Co. Luling and Lytton Springs by Magnolia Petroleum Co. Duval County by Texas Co. Saxet, effective September 29, by Humble Oil & Refining Co. and Texas Co.

(Continued on Page 33)

TANK WAGON MARKETS

Quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, include taxes

January 30, 1934

Taxes

The gasoline quotations given in the following tables include the 1 cent Federal tax, as well as state, county and city taxes. The gasoline quoted is the regular or standard grade. In most marketing areas a third grade and a premium grade are also available.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of wagon	Kero. tank wagon
Atlanta, Ga.	21 0	21.0	7.0	14 0
Augusta	21.0	21.0	7.0	14.0
Macon	21.5	21.5	7.0	14 0
Savannah	21.5	21.5	7.0	14.0
Birm'ham, Ala.	23 5	23.5	8.0	12 0
Mobile	22.5	22.5	8.0	12 5
Montgomery	21.0	21.0	8 0	14 5
Jackson, Miss.	20.5	20.5	7.0	13.0
Vicksburg	20.0	20.0	7.0	13.0
Jack'ville, Fla.	21.5	21.5	8.0	12 5
Miami	21.5	21.5	8.0	12 5
Pensacola	21.5	21.5	8.0	13 5
Tampa	21.5	21.5	8.0	12 5
Lexington, Ky.	19 0	19 0	6.0	11.0
Covington	19.5	19 5	6.0	11 0
Louisville	19 5	19 5	6 0	11.0
Paducah	18.5	18.5	6.0	10.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 2 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia and Mississippi include 1 cent state tax; in Alabama, an inspection fee of one-half cent on kerosene and one-fortieth cent on gasoline. To Pensacola, Mobile and Birmingham state taxes on gasoline add 1 cent city tax.

Southwestern District

MAGNOLIA PETROLEUM CO.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of wagon	Kero. tank wagon
Dallas, Tex.	15.5	19.0	5.0	8.5
Fort Worth	15.5	19.0	5.0	8.5
Houston	14.5	18.0	5.0	8.5
San Antonio	15.5	19.0	5.0	8.5
El Paso	16.0	19.5	5.0	11.0
Muskogee, Ok.	14.5	18.0	5.0	8.5
Okla. City	14.5	18.0	5.0	8 5
Tulsa	14.5	18.0	5.0	8 5
Ft. Smith, Ark.	13.6	17.1	7.0	9 0
Little Rock	15.6	19.1	7.0	9 0
Texarkana	13.5	17.0	5.0	8.5

Standard Oil Co. (Indiana)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of wagon	Kero. tank wagon
Chicago	17.3	17.3	4.0	9 7
Decatur, Ill.	17.7	17.7	4.0	10 2
E. St. Louis	17.0	16.2	4.0	9 5
Joliet	17.7	17.7	4.0	10.2
Peoria	17.7	17.7	4.0	10 2
Quincy	17.5	17.5	4.0	10.0
Davenport, Ia.	17.6	17.6	4.0	10.1
Des Moines	17.6	17.6	4.0	8 0
Mason City	17.6	17.6	4.0	10.1
Sioux City	17.3	17.3	4.0	9 7
Duluth, Minn.	18.3	18.3	4.0	10.4
Mankato	17.8	17.8	4.0	10 3
Minneapolis	17.9	17.9	4.0	10 4
LaCrosse, Wis.	19.3	19.3	4.8	10 8
Green Bay	18.7	18.7	5.0	10.2
Milwaukee	18.3	18.3	5.0	9 7
Madison	18.4	18.4	5.0	9 9
Detroit, Mich.	17.5	17.5	4.0	10.5
Grand Rapids	17.7	17.7	4.0	10.2
Saginaw	18.0	18.0	4.0	10.5
Evansville, Ind.	15.5	15.5	5.0	10 0
Indianapolis	18.7	18.7	5.0	10.2
South Bend	19.0	19.0	5.0	10.5
Fargo, N. Dak.	19.6	19.6	4.0	21 1
Huron, S. Dak.	19.9	19.9	5.0	11 4
Sioux Falls	19.4	18.4	5.0	10 9
K. C. Mo.*	16.7	16.7	4.0	8 2
Springfield*	16.6	16.6	4.0	9.1
St. Louis	15.7	15.7	3.5	8 7
St. Joseph*	16.3	16.3	4.0	8.3
Wichita, Kans.	15.6	15 6	4.0	9 1
Bartlesville, Ok.	16.0	18 5	5.0	8 5

*State tax 2 cents, 1-cent city tax and 1-cent Federal tax.

Effective June 1, 1933—Discounts off tank wagon price to consumers on 500 gallons or more per month in territory outside of Chicago metropolitan area: 2 cents on Ethyl and Red Crown gasolines, and 1 cent on Stanolind gasoline. One-half cent additional discount in Chicago division.

Effective July 1, 1933—Discounts on resellers authorized agent's agreement made off the service station price throughout the territory as follows: 2.5 cents on Red Crown, Ethyl and Standard Red Crown gasolines, and 1.5 cents on Stanolind gasoline. Half of reduction from normal service station price shall be absorbed by resellers up to maximum of 1 cent on all grades.

In St. Louis and St. Louis County, Missouri, the following discounts are in force: For 300 to 3,000 gallons monthly, 2 cents on regular and premium, 1 cent on third grade; for 3,001 to 10,000 gallons, 3 cents on regular and premium, 1 cent on third grade; for more than 10,000 gallons, 3½ cents on regular and premium, 1 cent on third grade.

Stanolex Furnace Oil in Chicago

Effective September 13, 1933, prices f.o.b. Chicago, tank wagon prices: No. 1 (36-40 lt. stw. zero), under 100 gallons, 8¾ cents; No. 2 (30-34 stw. zero), 7¾ cents; No. 3 (22-26 zero), 7¼ cents; No. 4 under 300 gallons (12-16 zero), 6¼ cents; viscosity of No. 4, 90-115 at 100° F.; No. 5 under 300 gallons, 6 cents; for deliveries of 100 gallons or more deduct 1 cent.

Naphtha

	Tank wagon
Oleum spirits	13.9
V.M.&P. naphtha	15.9
Cleaners' naphtha	15.0
Stanisol	15.0

Prices f.o.b. Chicago, September 13, 1933. Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of wagon	Kero. tank wagon
Atl'tic City, N.J.	17.5	17.0	4.0	10.0
Newark	16.8	16.5	4.0	9.5
Annapolis, Md.	18.1	17.6	5.0	10.0
Baltimore	17.6	17.1	5.0	9.0
Cumberland	19.1	18.5	5.0	13.7
Wash'g'n, D. C.	15.8	15.3	3.0	11.0
Danville, Va.	20.2	19.7	6.0	13.9
Norfolk	18.7	17.0	6.0	11.2
Petersburg	19.5	19.0	6.0	11.4
Richmond	19.1	18.6	6.0	11.7
Roanoke	20.3	19 8	6.0	12.9
Charls'n, W.Va.	18.5	18.0	5.0	12.6
Parkersburg	17.8	17.3	5.0	11.2
Wheeling	18.5	18.0	5.0	12.2
Charlotte, N. C.	21.9	21.0	7.0	13.5
Hickory	22.2	20.5	7.0	13.7
Mt. Airy	22.2	21.7	7.0	13.8
Raleigh	21.7	21.2	7.0	13.3
Salisbury	22.0	19.0	7.0	13.6
Charleston, S.C.	19.7	19.2	7.0	11.8
Columbia	21.5	21.0	7.0	13.2
Spartanburg	21.9	21.0	7.0	13.5

Note—Dealer contracts are written at 2½ cents above the posted tank car price, less a voluntary allowance of one-half cent per gallon. This affects all points. Kerosene 1 cent off tank wagon for 25 gallons or more under contract except New Jersey and Baltimore, Md.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of wagon	Kero. tank wagon
N. Orleans, La.	19.3	17.5	*7.0	†12.0
Baton Rouge	18.7	18.2	6.0	†12.0
Alexandria	19.6	19.1	*7.0	†10.0
Lafayette	19.8	19.3	*7.0	†12.0
Lake Charles	19.7	19.2	*7.0	†13.0
Shreveport	17.5	17.0	6.0	†12.0
Knoxville, Tenn.	23.2	22.7	8.0	13.0
Memphis	21.6	19.0	8.0	9.5
Chattanooga	23.0	22.5	8.0	12.0
Nashville	22.5	22.0	8.0	11.0
Bristol	23.5	21.0	8.0	14.0

*Includes city tax of 1 cent. †Louisiana kerosene prices include 1-cent state tax.

Commercial consumers for tank wagon delivery pay following amounts over tank car price, basis yearly deliveries:

1,000 to 75,000 gallons	2.5
75,000 to 300,000 gallons	1.5
Over 300,000 gallons	1.0

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA*

	Gasoline: Tank wagon†	Gasoline: Posted retail	Gasoline: Incl'ds tax of wagon	Kero. tank wagon
San Francisco	16.5	19 5	4.0	12 5
Los Angeles	16.0	19.0	4.0	12 5
Fresno, Calif.	17.5	20.5	4.0	14.0
Phoenix, Ariz.	18.5	21.5	6.0	‡16 0
Reno, Nev.	20.0	23.0	5.0	15 5
Portland, Ore.	19.0	22.0	5.0	13.5
Seattle, Wash.	19.0	22.0	6.0	13.5
Tacoma	19.0	22.0	6.0	13.5
Spokane	22.0	25.0	6.0	18.0

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Prices are at company's plant or depots, as company does not operate stations. A 4-cent per gallon discount is given dealers and mustomers taking tank wagon lots except in Phoenix where the discount is 1 cent. ‡Includes 5 cents state tax.

New York and Part of New England

STANDARD OIL CO. OF NEW YORK

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of wagon	Kero. tank wagon
Albany, N. Y.	15.6	16.6	4.0	8.5
New York	16.5	16.5	4.0	8.5
Buffalo	16.2	17.2	4.0	8.0
Rochester	15.0	16.0	4.0	8.0
Syracuse	16.1	17.1	4.0	8.5
Boston, Mass.	15.5	16.5	4.0	8.0
Portland, Me.	16.7	17.7	5.0	9.0
Manch't'r, N.H.	17.7	18.7	5.0	8.5
Burlington, Vt.	18.3	19.3	5.0	9.0

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of wagon	Kero. tank wagon
Philadelphia, Pa.	15.0	16.0	4.0	10.0
Pittsburgh	16.5	17.5	4.0	10.0
Allentown	16.5	17.5	4.0	10.0
Erie	16.5	17.5	4.0	10.0
Scranton	16.5	17.5	4.0	10.0
Altoona	16.5	17.5	4.0	10.0
Dover, Del.	16.5	17.5	4.0	10.0
Wilmington	16.5	17.5	4.0	10.0
Boston, Mass.	15.5	16.5	4.0	8.5
Springfield	16.1	17.1	4.0	8.0
Worcester	16.0	17.0	4.0	8.5
Hartford, Conn.	14.9	15.9	3.0	8.5
New Haven	14.7	15.7	3.0	8.0
Providence, R.I.	14.5	15.5	3.0	8.5

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of wagon	Kero. tank wagon
Denver, Colo.	18.5	21.0	5.0	12.5
Pueblo	16.5	19.0	5.0	13.0
Grand Junction	20.5	23.0	5.0	16.0
Casper, Wyo.	19.0	21.5	5.0	11.0
Cheyenne	17.5	20.0	5.0	13.0
Butte, Mont.	20.5	23.0	5.0	17.5
Billings	22.5	25.0	6.0	16.5
Helena	22.0	24.5	6.0	17.5
Great Falls	22.0	24.5	6.0	17.5
Salt Lake, Utah	21.5	24.0	5.0	16.0
Boise, Idaho	22.5	25.0	6.0	18.0
Twin Falls	22.5	25.0	6.0	18.0
Albu'que, N. M.	19.0	22.0	*7.0	13.0

*One-cent city tax.

Effective October 31, 1933, discount to dealers with or without contract throughout Continental territory except New Mexico as follows: Service station price less 3 cents for regular grade and 2 cents for third grade.

Canada*

IMPERIAL OIL, LTD.
Imperial 3-Star Gasoline

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of wagon	Kero. tank wagon
Hamilton, Ont.†	26.5	27.5	6.0	17.5
Toronto, Ont.†	26.5	27.5	6.0	17.5
Brandon, Man.*	31.0	34.5	7.0	22.5
Winnipeg, Man.	28.7	31.7	7.0	20.2
Regina, Sask.	29.0	32.0	6.0	21.5
Saskatoon, Sask.	31.3	34.8	6.0	24.3
Edmonton, Alta.	31.3	34.3	6.0	23.7
Calgary, Alta.	28.5	31.5	6.0	21.0
Vanc'ver, B.C.†	30.0	31.0	7.0	24.0
Montreal, Que.	24.0	27.0	6.0	17.0
St. Johns, N.B.	26.5	30.5	7.0	21.0
Halifax, N. S.	25.5	29.5	6.0	21.0

*Imperial gallon used in Canada. †Dealer discount posted tank wagon on gasoline in Ontario and British Columbia subject to dealer's discount of 3 cents per gallon.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of wagon	Kero. tank wagon
Ohio points	16.5	17.5	5.0	*12.5

*Includes state tax of 1 cent, effective July 22.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of wagon	Kero. tank wagon
Omaha	18.3	19.3	5.0	9.0
McCook	17.0	17.0	5.0	9.0
Norfolk	18.8	19.8	6.0	11.3
N. Platte	19.8	20.8	5.0	9.0
Scottsbluff	19.8	20.0	5.0	11.0

Note: Discount to dealers and AAA commissions. From service station price: Red Crown Ethyl and Standard Red Crown gasoline, 3 cents. Reliance (third grade) gasoline, 2 cents. Rentals under lease and agents agreement, one-half cent per gallon additional.

Discount to consumers under contract (large consumers under contracts and governmental units): On tank wagon deliveries of gasoline on monthly purchases of 500 gallons, or yearly purchases of 6,000 gallons, from the service station price: Red Crown Ethyl and Standard Red Crown Gasoline, 2 cents per gallon; Reliance (third brand) gasoline, 1 cent per gallon.

Retail Price Changes

Regular-Grade Gasoline and Kerosene

Standard Oil Co. (Kentucky) January 12 reduced the tank wagon and service station price of gasoline 1 cent in Lexington and Vicksburg.

Standard Oil Co. of New Jersey January 16 reduced the service station price of gasoline in Salisbury 1½ cents; January 22, reduced it 1 cent further; January 11 it reduced the service station price of gasoline in Spartanburg .4 cent. January 20 it advanced the service station price of gasoline 3.3 cents in Roanoke. January 22 it reduced the service station price of gasoline in Charlotte .4 cent. On the same date it reduced the service station price of gasoline in Hickory 1.2 cents.

Standard Oil Co. of Louisiana January 7 reduced the service station price of gasoline in New Orleans 1 cent; January 13, reduced it 1 cent further; January 17, advanced it 2½ cents. January 13 the company reduced the tank wagon price of kerosene in New Orleans 2 cents; January 20, advanced it 2 cents. January 17 the company advanced the service station price of gasoline 2 cents in Chattanooga and Nashville; January 22, advanced it 1½ cents further, and on the same date advanced the tank wagon price of gasoline .1 cent in Nashville. January 20 the company advanced the service station price of gasoline 1½ cents in Shreveport. On the same date it reduced the service station price of gasoline 2 cents in Memphis.

Standard Oil Co. of New York January 15 reduced the tank wagon price of kerosene one-half cent in Syracuse and 1½ cents in Rochester and Buffalo.

Atlantic Refining Co. January 19 reduced the tank wagon price of kerosene one-half cent in New Haven. January 9 it reduced the service station price of gasoline 1 cent in Providence.

Standard Oil Co. (Nebraska) January 18 advanced the tank wagon price of gasoline one-half cent in Scottsbluff and the service station price .7 cent.

Magnolia Petroleum Co. January 10 advanced the tank wagon price of gasoline 1½ cents and the service station price 2 cents in Texarkana. December 20 it reduced the tank wagon price of kerosene one-half cent in Texarkana.

Group 3 Market Emerges From Dumps; Prices Rise

(Continued from Page 22)

Drawing further upon natural gasoline stocks were heavy consignments to the Gulf for export or coastwise shipment.

Still another factor operating in the direction of lower stocks of natural gasoline was the spell of warm weather which preceded the cold snap of the present week. Besides appreciable losses of the more volatile fractions that attend warm weather, there is the fact that natural gas companies which are also producers of natural gasoline curtail their output in warm weather because of the curtailed demand for their major product, natural gas.

The whole range of naturals rose from an eighth to a quarter of a cent, with the trend still pointing upward.

The 24-26 and 20-22 grades of fuel oil advanced 5 cents, with firmness apparent in the whole list. Kerosenes were unchanged. Bright stocks rose 1½ cents, following the action of the Pennsylvania grades. Wax was strong, with prices unchanged Neutrals were firm.

NEWS FOR SALES DEPARTMENTS

French Motorists Angered by Forced Use of Alcohol

WASHINGTON, D. C., Jan. 29.—Introduction in Congress of a bill designed to provide for compulsory use of alcohol blend motor fuels in this country has drawn from President J. Borton Weeks, of the American Motorists Association, a warning that the use of blended fuels has caused general dissatisfaction among French motorists and enactment of the proposed law could produce no other result in the United States.

President Weeks declared that the bill introduced by Representative Frank Gillespie, of Illinois, calling for compulsory blending of 10 per cent of agricultural alcohol with all gasoline used as motor fuel, not only was unsound, as judged by technical and economic standards, but unwise as judged by policy and experience.

"Legislation calling for compulsory use of alcohol blend motor fuels in the United States was defeated last year in Congress and in several state legislatures," said President Weeks. "Congressmen and legislators foresaw the technical and economic shortcoming of the scheme.

"They told proponents of the plan, who are representative chiefly of distilling, farm equipment, alcohol and local trade promotion interests, that no present law prevented the marketing of such products in competition with other products, and that they were free to assume the risks and responsibilities that face every merchandiser of new products. They saw no need of legislation to force motorists to use blended fuels.

"Their wisdom has been upheld by the sad experience of French motorists. The people who are forced to use them seem to think otherwise. We have translated, as nearly verbatim as possible, 40 letters from French consumers written in answer to a questionnaire circulated by 'L'Officiel', an automotive journal. More than 95 per cent of the replies indicated extremes of dissatisfaction.

"The experience of these French motorists confirm those of our own people who tried blended fuels back in 1925 and abandoned them as unsatisfactory. They should serve also to warn those who support such legislation that the consumer can expect no compensating benefits, but only inconvenience and added expense, from fuels admittedly costing 2 to 3 cents per gallon more than those we now use."

SAYS REBATE WENT WITH "BUY YOURSELF A CIGAR"

DALLAS, Tex., Jan. 27.—When Jim Leito, filling station operator, filled C. Ray Lee's gasoline tank he probably didn't know that his patron was the law partner of La Vergne F. Guinn, special Federal prosecutor for oil code violators. Anyway, he is said to have allowed Mr. Lee a rebate with the remark, "Buy yourself a cigar." Instead Mr. Lee informed his partner of the incident.

The filling station operator was arraigned before U. S. Commissioner Lee R. Smith, charged with violating the NRA code for the petroleum industry and his bond was set at $500.

The arrest was said to have been the first in the Southwest on this charge. Three other alleged offenders were arrested soon afterward.

Oil Accounts for More Than Half of Manufacturers' Federal Taxes Paid

The Internal Revenue Department has just made public the amount of taxes derived from the various commodities as a result of levies against manufacturers, and for the fiscal year July 1, 1932, to June 30, 1933, the amount paid as oil taxes is more than half of the total. For the fiscal year now a little more than half over, the oil company's share will be still greater because of the 1½-cent Federal tax maintained on gasoline from July to the first of the year.

The reported payments to the Federal Government of such taxes by states follow:

INTERNAL REVENUE RECEIPTS FROM CERTAIN PETROLEUM TAXES, 1933

States—	Gasoline, per gallon, 1 cent	Lubricating oils, per gallon, 4 cents	Total, manufacturers' excise taxes*	Transportation of oil by pipe line, 4 per cent
Alabama	$217,256.21	$12,786.50	$678,785.73	.....
Alaska	683.90	.....	12,959.36	.....
Arizona	.....	.....	97,501.14	.....
Arkansas	279,284.96	109,502.60	518,661.48	$5,821.44
California	14,991,916.76	1,788,457.56	21,216,831.42	464,649.28
Colorado	91,712.19	65,017.76	663,726.02	23,637.17
Connecticut	.....	1,148.23	1,740,209.26	.....
Delaware	14,236.35	5.74	89,002.16	3,325.71
District of Columbia	.....	1,852.36	254,463.94	.....
Florida	20,012.41	1,075.56	447,513.88	.....
Georgia	51,594.32	539.53	1,185,052.89	.....
Hawaii	.....	.....	115,605.52	.....
Idaho	59.62	277.08	76,403.67	.....
Illinois	13,501,590.15	1,528,034.37	25,369,197.41	244,717.34
Indiana	204,661.48	13,659.25	2,244,284.79	13,749.14
Iowa	7,563.13	5,871.09	1,003,174.32	.....
Kansas	2,897,614.67	16,430.19	3,328,731.01	375,556.69
Kentucky	2,441,093.33	24,935.36	2,929,383.03	17,318.19
Louisiana	2,071,987.26	430,796.51	2,864,387.20	327,467.69
Maine	.....	6.47	213,539.22	.....
Maryland	421,479.10	64,302.06	1,071,866.59	.....
Massachusetts	1,758,573.07	238,459.62	6,506,662.49	.....
Michigan	1,034,599.48	46,669.04	19,416,945.50	18,572.34
Minnesota	3,170.32	5,975.12	1,254,742.48	.....
Mississippi	1,720.30	.....	124,928.55	.....
Missouri	4,245,062.67	369,084.36	6,642,955.90	687,739.90
Montana	151,025.72	3,385.10	246,566.34	137.33
Nebraska	153.74	16,401.20	338,278.52	.....
Nevada	.....	.....	34,474.50	.....
New Hampshire	.....	23.68	159,110.60	.....
New Jersey	4,976,546.54	994,543.18	9,568,463.24	.....
New Mexico	50,958.94	304.92	105,875.71	.....
New York	24,448,247.43	2,850,516.24	50,041,668.84	25,594.39
North Carolina	47,079.78	21,274.97	501,042.11	.....
North Dakota	6.50	.....	40,957.14	.....
Ohio	4,190,576.67	853,086.49	20,224,850.93	790,166.49
Oklahoma	15,297,496.26	1,231,460.97	16,871,921.78	1,807,968.37
Oregon	1,338.50	715.73	347,190.95	.....
Pennsylvania	17,451,814.52	3,930,351.00	26,745,899.98	924,673.47
Rhode Island	40,925.82	4,624.68	481,156.63	.....
South Carolina	1,689.14	10.80	81,394.68	58.80
South Dakota	604.06	.....	113,428.75	.....
Tennessee	7,917.97	874.33	542,656.88	4.79
Texas	13,431,250.66	1,443,576.76	15,932,716.42	1,731,605.84
Utah	164,139.11	21,516.22	360,797.84	.....
Vermont	.....	143.32	64,917.70	.....
Virginia	19,023.76	505.57	505,989.24	.....
Washington	260.61	3,508.18	677,503.60	.....
West Virginia	178,312.41	121,993.87	534,205.94	1,760.06
Wisconsin	202,231.54	9,026.75	3,152,840.44	.....
Wyoming	11,941.16	194.69	56,390.42	2,773.07
Total	$124,929,412.02	$16,232,924.81	$247,786,815.14	$7,467,297.50

*Section 600 of Revenue Act of 1926 and Title 4 of Revenue Act of 1932.

CAR SALES INCREASE

Despite strikes and the delay in delivery of materials to automobile manufacturers in November and December, 1933 proved to be a much better year than 1932 with respect to the total number of cars delivered.

Total factory sales for 1933 amounted to 1,959,201 vehicles, compared with 1,370,678 vehicles in 1932. Factory sales of passenger cars in December totaled 52,601 against 42,818 in November and 85,858 in December, 1932.

Increases in factory sales were recorded from Canada where the December total was 3,262 units. This compared with 2,291 units in November and 2,139 units in December, 1932. Of these totals, passenger cars amounted to 2,171 in December, against 1,503 in the previous month and 1,561 in December, 1932.

CLAIM PREMIUMS NECESSARY

CHICAGO, Jan. 29.—Attorneys for the Suburban Motor Service, operating a chain of several dozen service stations in the Chicago region, charged in Federal Court here January 25 that the petroleum code was working a hardship on small oil dealers and if strictly enforced would put them out of business. The company is defendant in a case in which the Government was seeking an injunction to prevent it from giving away premiums at its stations in alleged violation of the code. The concern was alleged to have given away glassware and other articles with each 7 gallons of gasoline. The attorneys for the defense asserted 60 per cent of the concern's business had been lost by operating under the code and that it was forced to go back to the giving of premiums to exist.

SECOND INDICTMENT ON CODE

LOS ANGELES, Calif., Jan. 27.—The second Federal grand jury indictment against petroleum marketers for violation of the oil code was completed in the past week. The indictment names C. C. Carr, of the firm of Carr Brothers, as the offender.

Carr is accused in three counts of asserted violations of the posted prices in effect of selling gasoline to H. C. Carmical, A. A. G. Scherbel and John M. Ousby. The posted price was 19 cents a gallon. Carr is asserted to have sold gasoline in 5 and 7-gallon lots at 17 cents a gallon.

Exports of Refined Oils Continue Upward Trend

Refinery products are sharing in the general improvement of export business and during November, the latest month for which the Department of Commerce has made its reports available, exports greatly exceed imports by a substantial margin for all important oils. The following figures have been compiled by the bureau:

EXPORTS

	Barrels
Petroleum, crude	3,305,195
Natural gasoline	124,378
Gasoline, naphtha, and other finished light products, in bulk	2,638,755
Gasoline, naphtha, and other finished light products, in containers	132,503
Illuminating oil, in bulk	942,783
Illuminating oil, in containers	162,004
Gas oil and distillate fuel oil	935,736
Residual fuel oil	563,234
Lubricating oil, red and pale	331,359
Lubricating oil, black	35,244
Lubricating oil, cylinder	163,999
	Gallons
Mineral spirits	349,174
Insulating or transformer oils	124,061
Light lubricating oils in small packages	18,863
	Pounds
Lubricating greases	7,135,268
Paraffin wax, unrefined	8,023,252
Paraffin wax, refined	11,018,870
	Tons
Petroleum asphalt	18,933
Petroleum coke	8,879

IMPORTS

	Barrels
Petroleum, crude	1,875,039
Fuel oil, including topped petroleum	955,757
Paraffin oil, not lubricating	213
Liquid derivatives of petroleum, n.e.s.	509
Gasoline and other motor fuel	1,473
Illuminating oil, kerosene	448
Lubricating oils, including paraffin oil	191
	Pounds
Paraffin and paraffin wax	3,720,697

Alcohol Blend Legislation Is Again Before Congress

A new bill calling for compulsory blending of 10 per cent by volume of domestic agricultural alcohol with all motor fuel sold in the United States was introduced in the House of Representatives January 3 by Frank Gillespie, of Bloomington, Ill., representative from the seventeenth Illinois district.

The bill is similar in most respects to those introduced at the last session by Congressman Dirksen, of Illinois, and others. It provides that 2 per cent of alcohol manufactured from "corn or other domestic commodities" shall be blended with all motor fuel sold within 90 days after the proposed law becomes effective. Two per cent alcohol is to be added each month thereafter until the 10 per cent by volume is reached.

Congress refused to pass mandatory alcohol blend legislation, which would have increased motor fuel costs by an estimated $350,000,000, at the last session, but provided that hearings be held on the proposal. These have been repeatedly postponed, with the first now scheduled to be held during January.

The blend scheme has been opposed by the U. S. Bureau of Standards, the American Automobile Association, both of which have made repeated tests with blended fuels and found them wanting, and by the American Motorists Association, National Farmers Union, National Highway Users Conference, and other groups.

State legislation with similar purposes failed of passage in Iowa, Kansas and other "Corn Belt" states last year, although strongly supported by local chambers of commerce, alcohol producers, farm equipment manufacturers, and some other interests.

NATURAL GASOLINE MANUFACTURE

Association Will Gather Data by Fields and Grades

The Natural Gasoline Association of America is now prepared to collect and compile detailed production figures monthly covering all plants in the Mid-Continent and Gulf Coast areas. A form of questionnaire has been designed in simple but complete form which will be supplied manufacturers and a sufficient number of the latter have approved the use of the form to make the resultant compilation complete enough to meet all purposes of the association. Efforts are now being made to make the record reflect a 100 per cent coverage, however, so that the data will be comparable with that reported by the U. S. Bureau of Mines.

Because of the great mass of data included in the Bureau of Mines reports, covering crude production, refinery production, demand, stocks, etc., of products other than those of the natural gasoline industry a delay naturally resulted in learning trends within the natural gasoline industry until one and one-half to two months had passed. Because of the rapidity with which the natural gasoline market changes, the relative ease with which production can be shifted from one grade to another and the need for more detailed information than is currently made available, the association is attempting this fact-finding program.

The forms to be filled out by the reporting companies will be identified by a code number only. The reporting company will show the assigned number on its answer and the production in gallons will be shown acording to the volume produced by grades in each of the fields outlined here.

The grades are arranged in accordance with vapor pressures and the six classifications follow: 30 pounds, 26, 22, 18, 14 and 12 pounds or under. The production, reported by grades, will represent net and arranged by fields as follows:

Consolidated Natural Gasoline Production Report, Mid-Continent and Gulf Coast

Oklahoma City.
Osage.
Seminole.
Rest of Oklahoma.
Total for Oklahoma.
East Texas.
North Texas.
Panhandle.
West Central Texas.
Rest of Texas.
Total for Texas.
Kansas.
Arkansas.
Louisiana.
New Mexico.
Total Mid-Continent.

Total natural gasoline in storage (including working stocks) in Mid-Continent and Gulf Coast (gallons).

Estimated minimum working stocks for all your plants (gallons).

Date of report.

Exports in November 7,579 Bbls. Less Than October's

Natural gasoline exports from the United States in November, 1933, totaled 124,378 bbls., as compared with 131,957 bbls. in October, a falling off of 7,579 bbls., according to figures compiled by the Bureau of Foreign and Domestic Commerce. The November exports were valuel at $124,378.

The countries receiving the November exports were: France, 5,251 bbls.; Canada, 69,059 bbls.; British West Indies, 224 bbls.; Dutch West Indies, 49,824 bbls.

The customs districts in the United States clearing the shipments made during both October and November reported the following quantities handled by each:

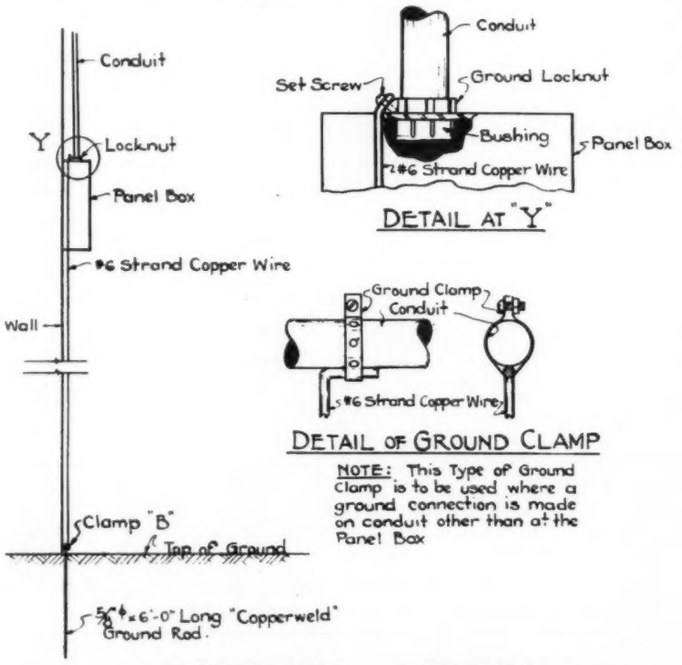
District—	Oct. (bbls.)	Nov. (bbls.)
Buffalo	3,340	1,597
Sabine	19,341	52,827
Los Angeles	.....	49,824
Florida	.....	244
Galveston	98,779	.....
Montana and Idaho	3,495	387
Dakota	2,686	5,566
Michigan	4,316	13,545
Duluth and Superior	.....	388
Total	131,957	124,378

Essential Metal Conduit Be Grounded as Well as Operating Electrical Devices

The grounding of the various electric devices used in a natural gasoline plant refinery, etc., has a double importance because of the hazards present in handling the volatile hydrocarbons. To minimize the chance of a charge of static building up in the conduit the following diagram was prepared by A. J. Balcom, superintendent of telegraph for the Magnolia Petroleum Co. following a long period of practical experience in that sort of work.

The diagram is almost self explanatory and the detailed drawings which accompany the main drawing leave little more to be said other than to emphasize the need for good materials along with the proper connections made. The experienced electrician appreciates the need for clean joints and contact points and where practical will solder the connections. Where clamps are used attention should be paid to the nature of the metals brought into contact and where there is a chance for corrosion taking place between the contacting surfaces, galvanized and copper strips should be used. Weather proofing also helps to preserve the contact.

The method prescribed for grounding the conduit at the panel box is shown below and where it is necessary to ground the conduit at some other point attention is directed to the suggestions offered in the drawing at the lower right-hand corner.



Method suggested for grounding conduit

REMODEL JACKSONBURG PLANT

The Jennings Oil Co. is adding a stabilizing unit and making several changes in its Jacksonburg, W. Va., natural gasoline plant. The work will be started immediately.

Approve Natural Gasoline Committee for Region Six

The appointment and approval by the Planning and Co-ordination Committee of the following members to the Regional Natural Gasoline Committee for Region No. 6 has been completed, according to an announcement made available by R. B. Brown, secretary of the Planning and Co-ordination Committee.

Subsequent approval of these appointments was made by Administrator Ickes, January 18. Following are the members of the new committee: Earle Derby, Standard Oil Co. of California; L. V. Cassidy, Lomita Gasoline Co.; O. C. Field, O. C. Field Gasoline Corp.; H. R. Linhoff, Richfield Oil Co. of California; R. S. Lytle, Los Nietos Producing & Refining Co.; N. H. Mull, Texas Co.; R. S. Tulin, Shell Oil Co.; R. C. Wheeler, General Petroleum Corp.; L. L. Aubert, Norwalk, Bankline Co.; C. R. Gallagher, Western States Gasoline Co.; and Mark D. Woolery, Del Rey Oil & Refining Co.

California Produced 9 Per Cent Less Natural in 1933

California natural gasoline plant operators had 210,000 bbls. less of their products in storage at the close of 1933 than at its beginning and for the year record a decline in production of about 9 per cent, an advance in the utilization of their products by refiners of approximately 4 per cent and a decline in shipments out of the State for Atlantic and foreign consumption of 40 per cent.

The daily average natural gasoline production decreased 148 bbls. during December and amounted to 32,574 bbls., while the daily average utilization of natural decreased 8,604 bbls. to 26,100 bbls. Shipments totaled 6,550 bbls. daily, an increase of 2,462 bbls., due to a large increase in the Atlantic Coast and foreign demand.

During the year 1933 as compared to 1932, the daily average production decreased 3,000 bbls. and amounted to 32,000 bbls., the daily refinery utilization increased 1,000 bbls. and amounted to 27,000 bbls. while the daily shipments decreased 2,000 bbls. and amounted to 3,000 bbls.

Stocks at the end of 1933 amounted to 2,203,706 bbls., a decrease of 73,642 bbls. under November, 1933, and a decrease of 210,000 bbls. under December, 1932.

SUPPLY

	Dec.	Nov.
Total production	33,168	33,214
Stock trans. (deliv.) receipt—net	(302)	(343)
Total	32,866	32,871
Deduct refinery requirements:		
Run to stills	4,079	4,040
Blended	22,021	30,664
Total	26,100	34,704
Gains (losses) unaccounted for—net	(1,868)	(2,360)
Net supply available to market	4,898	(4,193)

DEMAND

Domestic consumption including bunkers	724	478
Off-shore shipments:		
Pacific foreign exports	614	.....
Atlantic foreign exports	5,936	1,661
Intercoastal shipments	.....	2,427
Total market demand	7,274	4,566
Surplus or (deficit)	(2,376)	(8,759)

PLANT OPERATIONS

Number of plants operating	101
Daily capacity in thou. cu. ft.	2,292,455

PRODUCTION BY FIELDS

	Gas treated (M.C.F.)	Natural gasoline produced (gallons)
Fullerton and Whittier	416,179	1,116,637
Midway	1,424,270	2,379,497
Huntington Beach	2,043,652	2,955,513
Kettleman Hills	11,145,540	13,648,425
Long Beach	2,203,861	5,921,626
Richfield	497,348	586,776
Santa Fe Springs	3,387,041	5,607,261
Seal Beach	533,329	862,279
Ventura Avenue	3,853,022	3,562,539
All other fields	3,642,490	5,771,370
Total	29,146,732	42,411,923

PRODUCTION BY METHODS

Type of plant—	Gas treated	Natural gasoline produced (gallons)	Gasoline recovery per M.C.F. gas treated
Oil absp.	28,998,866	42,263,497	1.457
Compressor	147,866	148,426	1.004
Total	29,146,732	42,411,923	1.455

Finished gasoline prod. at plants, bbls.—63

STOCKS

	Gallons	Barrels
Natural gasoline held by plant operators	90,262,116	2,149,098
Natural gasoline held by refiners	2,293,547	54,608
Total	92,555,663	2,203,706

LIQUEFIED PETROLEUM GASES
(Daily barrels)

	Dec.	Nov.
Production	593	492
Sales	724	478

First Drilling Program at Conroe Nearing End

(Continued from Page 11)

Water Oil Co., with its 100 per cent wells and those owned jointly with Republic Production Co., G. W. Strake and Houston Oil Co., has 99 wells; Texas Co., 48 wells; Sun Oil Co., 48 wells; Alpha Petroleum Co., 26 wells; Abercrombie & Harrison, 19 wells; Gulf Coast Drilling & Producing Co., 19 wells, and George W. Strake (alone), 14 wells. The remainder of the wells is divided among some 35 different operators. There have been as high as 75 different operators in the field.

Proration Observed

Production at Conroe to January 1, 1934, totaled 23,754,661 bbls. Of this 21,305,016 bbls. was produced during 1933. Proration regulations have been closely observed and only in a very few instances have there been reports of excess production. At this time the field is virtually 100 per cent within proration allowables. This, however, did not include the Harrison & Abercrombie crater well flowing out of control from June 19 to January 3. Its production was excepted in all Conroe and state proration orders. The output of this well has totaled more than 1,200,000 bbls.

The daily allowable of the field as of January 1 is 48,917 bbls., which is allotted to the various wells on a combination acreage potential basis. Under the present schedule the allotments range from 50 to 79 bbls. per well. The largest producing month for the field was August, 1933, when the production was 2,662,683 bbls., but the decline since then has been due entirely to proration restrictions and not to any inability of the field to produce more.

It has been variously estimated that the flowing life of the field will be at least 15 years if present producing practices are continued. Some statisticians give the field 25 years. An additional 500,000,000 bbls. of oil is expected to be recovered and at the present rate of withdrawal of less than 2,000,000 bbls. a month, 250 months or a little over 20 years would be required to drain the field.

That the greater part of the oil will be recovered by flowing is likely in view of the unusually favorable reservoir conditions and to the conservative control of production and reservoir energy which has been in force since the opening of the field and which is expected to be maintained. The average bottom hole pressure of the field as of November 26, the most recent survey, was 2,120 pounds. The decline in pressure at this time is at the rate of 1.39 pounds per 1,000,000 bbls., or, based on a withdrawal of 2,000,000 bbls. a month, at the rate of 2.78 pounds a month. Thus, in a period of 250 months, at the present rate of withdrawal, there would be a decline in bottom hole pressure of only 695 pounds, and theoretically, a bottom hole pressure of 1,455 pounds will remain at the time the field is completely drained.

Three Wells on Lift

At present there are only three wells on artificial lift. These include West Production Co.'s No. 1 Foster, a well recently completed on the extreme south end of the field and which is producing 44 bbls. daily on a standard pumping rig; Tide Water Oil Co.'s No. 3 Granger and Sun Oil Co.'s No. 3 Stewart, both of which are on the southeast side of the field and in each of which a Hughes plunger lift has just recently been installed to assist these wells in making their allowables.

The main Conroe sand reservoir is characterized by a well defined high pressure gas cap overlying the saturated oil section. In drilling and production practices every effort has been made to prevent the dissipation of this gas and conserve its valuable energy by restricting the oil withdrawal ratably and to such a point that the rising water table and hydrostatic head will maintain the pressures and the stability of the reservoir features. Operators are allowed a gas-oil ratio of 2,000 feet per barrel but through the common practice of blanking off most, or all of the gas cap and completing wells in the saturated sand section only, gas-oil ratios have been reduced to as low as 500 feet per barrel in some instances.

It might be stated at this time that the structure is domal and is believed to have been caused by the uplifting of a large salt mass. The saturated sand section of the main producing horizon averages 56 feet in thickness and the overlying gas cap at the apex is around 20 to 30 feet in thickness. The sand has a high porosity and permeability, permitting of a high recovery if proper production practices and control are followed and the unusually favorable reservoir conditions and energy are utilized to their greatest advantage.

Only 13 Made Water

To date, only 13 wells have ever made any water and of these 4 are now clear. With few exceptions, the water percentages have been very slight and of no concern from a production or disposal standpoint. The greatest amount of water produced by any well has been in Humble Oil & Refining Co.'s No. 1 Dobbins, which on latest report made as much as 21 per cent. Of particular note is the fact that this well is in the highest part of the field. However, the presence of water in this well and several others in the heart of the field is attributed to faulting conditions. These wells have made water from the start, and their bottoms are above the general water level of the field.

Development of Conroe has been marked by numerous blowouts and a total of eight wells, exclusive of Harrison & Abercrombie's producing crater, have been lost from that cause. There have been a number of additional blowouts but except for the eight the others were saved and finally completed as wells. The charging of shallow gas and water sands with high pressure gas created a hazardous situation in the field, where soft, unconsolidated formations offered little resistance to blowouts. Although the situation is fairly well in hand as a result of precautions taken by operators in drilling and casing off the shallow sands, the danger still is not past. The Harrison & Abercrombie crater well, which has been much in the limelight, was caused by high pressure gas in charged shallow sands blowing up through the unconsolidated surface formations around the outside of the surface casing. That well had been completed in the main producing sand and when the blowing out of the gas around the outside of the pipe cratered the hole, the christmas tree and casing fell in and broke off, preventing any control of the production.

Nineteen dry holes have been drilled in the Conroe area since the discovery of the field. The majority of these has been around the outside of the present producing limits, serving to define the field. However, several have been in the heart of the pool, their failure being due largely to faults.

Five pipe lines furnish outlet for the field. These lines are operated by Humble Pipe Line Co., Texas Pipe Line Co., Tide Water Pipe Line Co., Sun Pipe Line Co. and Channel Transport & Markeing Co. Magnolia Pipe Line Co. and Sinclair-Texas Pipe Line Co. have lines through the field.

SHELL UNION SHARES

Stockholders of the Shell Union Oil Corp. have been called to vote on February 5 on changing its incorporation certificate so that the company by using capital shares may acquire its 5½ per cent cumulative preferred stock for retirement.

When Drilling Through Gas-Bearing Formations Weight Your Mud With

BAROID

To Prevent Damage From

BLOW-OUTS and FIRES

BAROID makes an extra-heavy colloidal drilling mud that provides an adequate factor of safety to keep your well under control at all times. It enables the preparation of pumpable muds weighing as much as 140 to 150 pounds per cubic foot. BAROID-base drilling muds will not settle out if circulation is suspended over long periods of time, and assure freedom from stuck drill pipe and casing.

Be sure to get BAROID—the *proven* weighting material for rotary mud; a uniform product manufactured by an old established company. *There is no substitute!*

OTHER BAROID PRODUCTS

- AQUAGEL: Trouble-Proof Colloidal Drilling Mud.
- LEMCO MUD SCREEN: For Removing Cuttings and Abrasive Material from Drilling Mud.
- STABILITE: A Chemical Mud Thinner.

Stocks Carried
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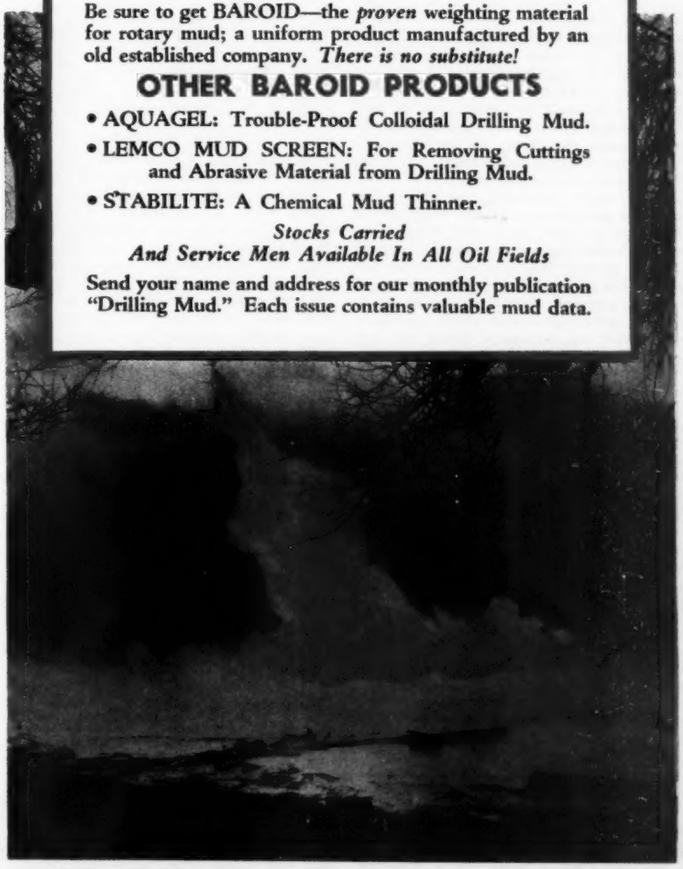

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NEWS FOR PETROLEUM REFINERS

California Oil Marketers Suggest New Price Plan

LOS ANGELES, Calif., Jan. 27.—Pacific Coast marketers have forwarded a gasoline marketing cartel agreement covering 95.32 per cent of normal sales on the Pacific Coast to Federal Oil Administrator Ickes in Washington for approval. The cartel provides for the allocation of gasoline sales among marketers on a percentage basis predicated on sales during the month of October, 1933. Signatories to the gasoline marketing cartel agreement include Associated Oil Co., William P. Andrews Oil Co., R. R. Bush Oil Co., Caminol Co., Ltd., Estado Petroleum Corp., Ltd., General Petroleum Corp., Hancock Oil Co., Macmillan Petroleum Corp., Norwalk Co., Petrol Corp., Richfield Oil Co., Rio Grande Oil Co., San Fernando Oil Co., Seaside Oil Co., Shell Oil Co., Signal Oil & Gas Co., St. Helens Petroleum Co., Ltd., Standard Oil Co., Sunset Pacific Oil Co., Texas Co., Triangle Oil & Refining Co., Union Oil Co., Western Oil & Refining Co., and D. R. Wilson Refining Co. Under the marketing cartel gasoline sales are limited to the relative pro rata share of each marketer during last October and penalties are provided for excess sales. Certain other stipulations prevent the construction of new stations or change in marketing policy without approval of a majority of other operators involved. Under the cartel, marketing companies are divided into three groups the first comprising the seven major companies, the second group the seven leading independents and the third group the remainder.

The cartel provides that the retail price of gasoline distributed by Group 2 shall not be more than one-half cent per gallon under the price quoted by Group 1 and further that the differential between the price of Group 3 and Group 1 shall not exceed 1 cent per gallon.

The cartel agreement which has been forwarded to Secretary Ickes for approval has been in course of preparation for several months and is still unsigned by approximately seven independent marketers. The success of the Pacific Coast marketing cartel depends entirely upon the policy pursued by the unsigned minority and based on past experiences cut rate prices by a minority has invariably resulted in general demoralization of price structures.

Pacific Coast marketers hope with the aid of the marketing cartel and the national marketing agreement providing for the purchase of excess gasoline to stabilize Pacific Coast gasoline prices.

NAME PROGRAM COMMITTEE

The program committee for the Division of Refining of the American Petroleum Institute for 1934 has been appointed by Howard Bennette, vice president and chairman of the general committee for refining. Dr. L. W. Parsons, Tide Water Oil Co., New York, is chairman of the committee, with R. P. Anderson, of the Institute staff, as secretary. Other members of the committee are:

H. W. Camp, Empire Oil & Refining Co., Tulsa; R. T. Haslam, Standard Oil Development Co., New York; R. E. Haylett, Union Oil Co. of California, Los Angeles; J. Bennett Hill, Atlantic Refining Co., Philadelphia; E. W. Isom, Sinclair Refining Co., New York; K. G. Mackenzie, Texas Co., New York; Walter Miller, Continental Oil Co., Ponca City; Arthur E. Pew, Jr., Sun Oil Co., Philadelphia; J. B. Rather, Socony-Vacuum Corp., New York; A. S. Russell, Standard Oil Co. of California, San Francisco; Herschel G. Smith, Gulf Refining Co., Philadelphia; F. W. L. Tydeman, Shell Development Co., San Francisco, and R. E. Wilson, Standard Oil Co. (Indiana), Chicago.

Stress Importance of Diesel Engine as the Outlet for More Refinery Products

BY ROBERT C. CONINE

BUTLER, Pa., Jan. 29.—The substantial economies and increased efficiency effected by resort to the Diesel type engine in industrial and utilities fields are gaining wide recognition which promises a tremendous expansion of this market for petroleum products, Dr. C. S. Hoyt, head of the chemistry department of Grove City College, told members of the Pittsburgh group, National Petroleum Association, meeting in Butler. Doctor Hoyt is also consultant for Cooper-Bessemer Co. His subject was "Fuel and Lubricating Oils for Diesel Engines."

In switching railroad engines, Doctor Hoyt said, it had been found that the Diesel engine did the work at one-tenth the operating cost of the steam locomotive formerly employed. Similar economies were revealed when the change to Diesels was made on various types of heavy hoisting equipment.

Operating a small light plant for Grove City and the college, Doctor Hoyt got an output of 12.8 K.W.H. per gallon of Pennsylvania straw distillate consumed. This Diesel plant rated third among more than 160 complete Diesel plants checked in a recent national survey.

Effects of Cracking

Elimination of crankcase explosions which became frequent when it was first sought to raise the horsepower per cylinder and the revolutions per minute, was accomplished by preventing the lubricating oil in the crankcase from striking the incandescent undersurface of the piston, Doctor Hoyt said. In explaining the cause of the crankcase explosions the doctor stated that the lubricating oil was probably cracked into gasoline vapor and heavier residual, and the explosion followed the inrush of air. By placing a dead space under the piston crown the lubricating oil was prevented from coming in contact with the incandescent surface and cracking was eliminated.

The only drawback in connection with the Diesel engine, Doctor Hoyt pointed out, is that it cannot start with a full load. A clutch system is necessary, and several have been introduced which promise to greatly minimize this feature. However, even with the additional expense involved in providing an electrical intermediate to provide starting ability under full load, the Diesel is gaining popularity. In western oil fields, where the Diesel can operate on cheap fuel, this type of engine appears destined to replace other equipment.

Diesel "Ethyl"

Doctor Hoyt recounted that a sugar refinery required an engine which could utilize alcohol efficiently and the source of supply for oil was too distant. An engine was first run on kerosene and after reaching a suitable temperature the switch was made to alcohol. However, the low heating value of the alcohol soon allowed the engine to cool to a point where ignition failed. An ingredient was then sought which when added to the alcohol would give it a higher heating value. Such a material was found and proved efficient in such a small proportion as 1 per cent.

This recital was of considerable interest to the Pennsylvania refiners, whose gasoline, while possessing elements which cause severe engine knock, offers the properties most desirable from the standpoint of ease of ignition in a Diesel engine. It was pointed out that the Pennsylvania refiner might provide "ignitability" and the western refiners, "heat content" in producing the ideal Diesel fuel.

George M. Kirkwood, Pennsylvania Refining Co., was elected chairman of the group. Attending the meeting were the following: Louis A. Calkins, Valvoline; Leslie C. Borell, Daugherty's; A. Kinsilr, Daugherty's; T. G. Murphy, Franklin Creek Refining; G. L. Lindsay, Chicago Pneumatic Tool; R. L. Leroux, Valvoline; B. L. Heath, Freedom Oil; C. C. Morrisson, Gulf Refining; A. Hogan, Valvoline; J. Ditts, Valvoline; Lewis O. Sherwin, Pennsylvania Refining; Merle Cross, Valvoline; Charles M. Noyes, Valvoline; Herman J. Little, South Penn Oil; G. O. Ebrey, Pennzoil; B. M. Ditts, Valvoline; Ryan Storey, Ultra Penn Refining; A. M. Crittenden, Freedom Oil; Fred L. Way, Freedom Oil; W. L. Newhall, R. C. Wirtman and Charles C. Jarrett, all of Freedom Oil Works.

FINED $10,000 IN TAX SUIT

CHICAGO, Jan. 29.—Benjamin Burakoff was convicted in criminal court here January 25 of withholding from the state of Illinois payment totaling $15,251 of gasoline taxes. He was fined $10,000. Motion was made for a new hearing. Burakoff, head of the Blue Star Oil Co., asserted he had not collected taxes from his customers and hence he was unable to pay the tax.

POSTPONE HEARING

WASHINGTON, D. C., Jan. 29.—The hearing on the Government's suit for an injunction to restrain the Standard Oil Co. of New Jersey from what the Government charges is violation of the oil code was postponed today until February 5 upon the request of both parties.

The postponement was granted to give attorneys for both the Government and the company time to prepare their cases.

The suit was filed in connection with the "Babe Ruth contest" in which prizes were offered to children credited with the most slips turned in at Standard stations.

REFINERS PAY PREMIUMS

Crude from the McMillan Pool, Runnels County, Texas, of 44 gravity ,is bringing 15 cents per barrel premium from the Minneapolis Refining Co., at Minneapolis, Minn. The freight rate from the pool to that city is $1.50 which with posted price and premium makes the price of the oil $2.68 laid down at the refinery.

The Starlight refinery near the pool is taking 200 bbls. per day and around 200 bbls. per day is being shipped to a Canadian refinery running the plant a little over $3 per barrel laid down.

California Oil Shipments Showing Slight Increase

Shipments of California crude and refined oil to domestic and foreign ports during the first two weeks of January, 1934, are running slightly in excess of similar shipments during the corresponding period last year. A higher rate of fuel oil shipments to the Atlantic Seaboard for domestic consumption are expected to continue during the greater part of the year, as commitments have been made covering approximately 10,000,000 bbls. during 1934. In addition to the relief which will be afforded marketers by the shipments of fuel oil from California to the Atlantic Seaboard, conditions should be further alleviated as the result of export shipments to foreign ports. Indicative of the improvement shown in the export market, the Union Oil Co. has announced that it has chartered two foreign tankers for the transportation of 180,000 bbls. of fuel oil from Los Angeles Harbor to Buenos Aires in February. This will be the first fuel oil dispatched to the East Coast by the Union Oil Co. in nearly four years. The tankers chartered are the British motorship, Imperial Transport, due at Los Angeles Harbor from Vladivostok on January 30 and the Norwegian tanker, O. A. Knudsen, now en route from New Zealand.

N. L. MEYERS ARBITRATOR

Secretary of the Interior Harold L. Ickes, oil administrator, today announced he had dispatched Norman L. Meyers, secretary of the Petroleum Administrative Board, to San Juan, Puerto Rico, to look into a consumers' strike caused by an increase in the price of gasoline.

Benjamin J. Horton, acting governor of the island, and Boaz Long, deputy NRA administrator, invited Administrator Ickes to send a representative of the board to function as an impartial chairman of a committee of five in an effort to settle the consumers' strike.

FIRE COMMITTEE ENLARGED

Two additions to the special subcommittee on tanker and barge fires of the American Petroleum Institute's Division of Marketing, working under the committee on fire prevention, have been announced by C. A. Ellis, chairman of the main committee. The two new members are: H. A. Browne, Shell Eastern Petroleum Products, Inc., and W. F. Jones, superintendent of the marine department of the Gulf Refining Co., both of New York.

ASK FOR LOWER TAX

The Automobile Club of Michigan has filed two petitions with the Michigan department of state, one proposing a reduction in gasoline taxes and the other a reduction in license plate costs. The one petition would amend the state constitution to prohibit the collection of more than a 2-cent state gasoline tax. The Michigan state tax is 3 cents a gallon.

GASOLINE PRODUCTS FILE SUIT

Gasoline Products Co. has filed suit against Oriental Oil Co., alleging patent infringement. The suit involves the operation by Oriental Oil Co. of a cracking unit, reported to have been constructed by A. M. Peairs and Emil Geppelt, at the plant at West Dallas, Tex. The recent bill which was filed in the U. S. District Court for the northern district of Texas, Dallas division, alleges infringement of patents, particularly the following: Rosenbaum, No. 1,324,983; Cross, No. 1,734,079, and Howard and Loomis, No. 1,869,337.

J. J. Brown New President of Foster Wheeler Corp.

J. J. Brown, just elected president of the Foster Wheeler Corp., to fill the vacancy left by the death of L. B. Nutting, joined the Wheeler Condenser & Engineering Co. in 1907 as vice president and general manager. In 1919, upon the death of Mr. Wheeler, Mr. Brown was elected president. In 1927 the Wheeler

J. J. BROWN

Condenser & Engineering Co. combined with the Power Specialty Co. to form Foster Wheeler Corp., and Mr. Brown was made chairman of the board of the new company.

The Wheeler Condenser & Engineering Co. specialized in the design of heat transfer equipment, including condensers, evaporators, cooling towers, feed water heaters and heat exchangers. About 1923 rapid progress was made in the design of and use of heat exchangers. From that time on the Wheeler Condenser & Engineering Co. became a vital factor in the oil industry due to the large number of heat exchangers and other accessories, such as steam jet vacuum pumps and condensers, which it sold for refinery services.

It is a coincidence that the Power Specialty Co. was becoming active in refinery work about the same time (1923) due to improvements in the tubular oil heaters which had been first developed about eight years before. The Power Specialty Co. developed its fractionating equipment to supplement the tubular oil heater and a consolidation between the Wheeler Condenser & Engineering Co. and the Power Specialty Co. became logical. This consolidation made possible the manufacture of complete distillation units within the one organization.

Mr. Brown has been in close contact with the oil industry for many years and it was largely through his efforts that the first complete American distillation units were erected in several European countries, including Russia, Italy, Hungary, Austria, Germany, France, Poland, Rumania and Czechoslovakia. Mr. Brown in this connection made several trips to Europe, promoting the use of Foster Wheeler distillation units.

ATLANTIC EARNINGS

Atlantic Refining Co. and subsidiaries report profit for 1933 of $6,556,000 including $1,320,000 nonrecurring profit on the sale of an interest in Union Atlantic Co. This compares with profit of $3,918,000 for 1932. Both figures are after interest, depreciation, taxes, etc. Earnings a share were $2.46 for 1933, compared with $1.45 for 1932.

Report on Solubility and Liberation of Gas From Natural Oil-Gas Solutions

The petroleum industry generally is now recognizing the importance of a scientific fact, advocated by the Bureau of Mines for a number of years, that none of the relationships of fluid flow in reservoirs and in the vertical columns of wells can be thoroughly understood and applied practically without definite knowledge of pressure and temperature conditions in the wells and especially of the amount and character of naturally dissolved gas in the crude oil and of the conditions which control the liberation of this gas from solution.

Specifically, petroleum engineers are now seeking information and devising ways of obtaining reliable data relating to the amount of gas dissolved naturally in the oil, the amount of gas liberated on reduction of pressure, the volume the gas occupied originally in the oil structure, and the inherent energy of the gas which may be utilized to propel oil through the sand to the surface. Other important factors relate to the effect of dissolved gas upon the viscosity, surface tension, and specific gravity of the oil.

If the operator knows the amount of dissolved gas in the oil in the reservoir sands, he can devise production methods, enabling him to approach maximum efficiency in utilizing the gas and its energy.

In addition to knowledge of the function of dissolved gas in oil production, knowledge of the volume increase of oil in the structure due to gas in solution is important in estimating oil reserves. The results of this Bureau of Mines study show that the volume occupied by gas in solution is considerable and may be much larger than is ordinarily supposed.

Knowledge of the amount of gas dissolved naturally in crude oil may also be applied in connection with unit operation of oil pools, where an equitable appraisement of each leasehold should include an estimate of the energy contained in the free gas as well as that contained in the gas dissolved in the oil.

Although the bureau has issued a recent mimeographed report giving results of gas solubility and gas liberation studies made on "bottom hole" samples taken from East Texas wells in 1932 and 1933, the basic work on this major research, in which a method of procedure was devised and a technique developed, began in 1929 and 1930, when well-head samples from high-pressure wells in the Oklahoma City, Kettleman Hills and Ventura, Calif., oil fields were studied. The detailed findings of this preliminary basic work have just been made available in Bureau of Mines Technical Paper 554, entitled "Solubility and Liberation of Gas from Natural Oil-Gas Solutions," by Ben E. Lindsly.

In view of the fact that the results of this reported study of the solubility and liberation of gas from well-head samples indicated the desirability of and naturally led to the obtaining of bottom hole samples, that are more nearly representative of the characteristics and properties of crude oil in its natural reservoirs, Technical Paper 554 should be read in the light of the more recent findings and as an aid to the understanding of the results reported in Bureau of Mines Report of Investigations, entitled "A Study of Bottom Hole Samples of East Texas Crude Oil," by Ben E. Lindsly, issued in May, 1933.

Technical Paper 554 gives a section to definitions and explanations of the special terms used in discussing the subject. The apparatus used and procedure followed in obtaining the well-head samples and in the subsequent laboratory work of measuring the liberated gas and residual oil, when the pressure in the sampling bombs is reduced to atmospheric, are described in detail.

Two methods of liberating gas from solutions—"flash" and "differential" are emphasized. Flash liberation refers to the action that occurs in the flow string of a well; essentially all oil and gas components present at high pressures are also present at low pressures. The term is borrowed from the refining industry, where "flash distillation" is frequently used to mean the action in a pipe still. The results reported in Technical Paper 554 indicate that flash liberation of gas results in solubility curves that are approximately straight lines when a considerable excess of free gas is present. Therefore, until the engineer acquires more complete knowledge on liberation of complex mixtures of hydrocarbons he may reasonably assume, when calculating flow of saturated oil-gas mixtures in vertical pipes, that an approximate straight-line relationship exists between the volume of gas in solution and the pressure on the oil at different points within the flow string of a well.

In contrast to flash liberation the experiments show that differential liberation, which is somewhat similar in principle to batch (differential) distillation, results in solubility graphs of pronounced curvature. The author of Technical Paper 554 believes that the major portion of the oil in the reservoir sands undergoes differential liberation upon reduction of pressure. Differential-liberation data should be obtained from samples of oil taken at the bottom of the well early in the life of a field so that they will represent as accurately as possible the oil as it exists in the sand. Since Technical Paper 554 was written, a number of such samples have been obtained by the bureau in certain newly developed fields, and the data are being studied for near-future reports.

The shrinkage of the oil due to liberation of dissolved gas is greater than is commonly supposed. The experiments indicated that the shinkage ranged from approximately 11.3 per cent for Ventura 34-degree A.P.I. gravity crude oil to 40.5 per cent for Kettleman Hills 63-degree A.P.I. gravity crude oil. Obviously, shrinkage of oil must be considered when estimating oil reserves in oil-bearing formations.

Supplementing the text of 50 pages and 16 figures, the paper contains two appendixes. One gives the chemical analyses of the oils produced from the wells which were studied in Oklahoma and California; the other gives detailed tabular data on the quantity and character of the gas liberated from solution in the several well-head samples of oil-gas mixtures.

Although the reported work on East Texas "bottom hole" samples and more recent studies of a similar character in Oklahoma City and other fields of the Mid-Continent are proving to be a more direct method of obtaining information on the fluid-energy relations existing in reservoirs and in vertical pipes, nevertheless, the data given in Technical Paper 554 warrant careful study for the light they shed upon the more recent findings.

Copies of Technical Paper 554, "Solubility and Liberation of Gas from Natural Oil-Gas Solutions," may be obtained only from the Superintendent of Documents, Government Printing Office, Washington, D. C., price 10 cents. Stamps are not accepted.

PIPE LINE CONSTRUCTION

MUSKEGON, Mich., Jan. 29.—United Light & Power Corp. of Davenport, Iowa, has been selected to lay the new 55-mile $500,000 natural gas line between the new Austin Township, Mecosta County Pool in central Michigan to Muskegon, it has been announced by E. H. Kifer, vice president of the American-Michigan Pipe Line Co. of Muskegon.

The American-Michigan company is a newly organized subsidiary of the American Light & Traction Co., which has contracted with Taggart Brothers, Inc., developers of the Mecosta County gas pool, for prior rights on a minimum of 15,000,000 feet, or enough to supply Muskegon for 10 years or more.

Edward Fischer, gas engineer for the United Light & Power Corp., has started a preliminary survey of proposed routes for the new line. He will remain in charge of engineering, specifications and construction.

Work is expected to start about March 1, or as soon as possible after a hearing on applications for a charter and permit to lay the line in Lansing February 8 before the Michigan Securities and Public Utilities commissions.

The line will be laid on a cost plus basis using local labor so far as possible and is expected to require about 120 days with completion scheduled for, on or about July 1.

Common councils of two large Michigan cities, Saginaw and Lansing, last week discussed the possibilities of utilizing Michigan natural gas, the one through a proposed new municipally-owned distribution system and the other through a private company formed by Alfred H. Doughty, former mayor of the state capital.

George W. Francis, head of an engineering company, conferred with the Saginaw city council and recommended appropriation of $10,000 for an engineering survey of the possibilities of a proposed municipal system. It was estimated a 10 or 12-inch line 60 miles long between central Michigan gas fields and Saginaw would cost $500,000.

The Lansing city council instructed Mr. Doughty to report in writing what progress his company, the Central Michigan Pipe Line Co., is making on plans to supply the city with natural gas under a franchise granted last December 7. Mr. Doughty advised the council he would post a bond of $100,000 as soon as the Michigan Public Utilities Commission has granted the company a permit to lay a line from central Michigan oil and gas fields, a distance of about 60 miles.

FORM JOBBERS ORGANIZATION

CHICAGO, Jan. 29.—Organizing as an association of strictly independent jobbers owning control of their own businesses, the Michigan Independent Petroleum Distributors Association came into being at Jackson, Mich., January 26. The plan of the new group, which succeeds the recently suspended Michigan Oil Men's Association, is for all members to own at least 51 per cent of their companies' stock.

The new association passed a resolution protesting against the 2-cent margin to jobbers contemplated in the new contracts under the recently approved marketing agreement and asking that the margin be increased to 2½ cents. A copy of the resolution was forwarded to Administrator Ickes.

President of the association is J. F. Wilson, Star Oil Co., Port Huron. J. H. Kelly, Jackson Oil Co., Jackson, is secretary. L. D. Maxon, Central Service Co., Lansing, is vice president. Directors are these three officers and R. P. Fleckenstein, Harold L. Merritt, V. J. Kahler and John A. May. Charles Goff, field secretary of the old association, has been retained in the same capacity with the new one.

L. B. PACE DIES

FORT WORTH, Tex., Jan. 29.—Lee Barney Pace, 42, superintendent of the McElroy plant of the Eastern Carbon Co., died suddenly January 21 of pneumonia. He was formerly with the United Carbon Co. at Monroe, La.

Late Fields

OKLAHOMA

Operators in the Tussey area of the Tatums district in Carter County are attempting to get together on a development program which would create a separate field in Sections 3 and 4-1s-3w, and adjacent leases. Several dry holes have been drilled between the Tatums and Tussey Fields but these producing areas have been put together in considering proration of the production. Conferences among the leaseowners was held in Ardmore Saturday, January 27.

One of the interesting wildcat tests in the Tussey area is the Dunmar and others' No. 1 Miller, NW cor. SW NE Section 6-1s-3w, near the town of Tussey. The total depth of the test is 3,270 feet, where it has been fishing for five joints of drill pipe. The operators plan to cement the drill pipe and then try to mill through or drill by.

Swabbing of wells in the southwest part of the Oklahoma City Field has proved successful with the Indian Territory Illuminating Oil Co. Two producers were completed by this method. The company's No. 2 Jarvis, NW cor. SE NW Section 26-11-3w, flowed 635 bbls. in four hours from the Wilcox sand at 6,466-6,547 feet. The gas was estimated at 25,000,000 feet a day. The company's No. 3 South Glendale, SE cor. NW NW Section 26-11-3w, flowed 1,800 bbls. a day in 4 hours and 40 minutes from Wilcox sand at 6,465-6,584 feet.

H. E. Rapp and others' wildcat well, No. 1 Price, C E half NE SW Section 19-14-3w, in the Edmond area of Oklahoma County, is making 50 bbls. a day of oil from Wilcox sand at 6,618-6,707 feet. It is located about 2 miles north of the Mid-Kansas Oil & Gas Co.'s No. 1 Messer, discovery in Section 32-14-3w.

KANSAS

Gypsy Oil Co.'s No. 1 Soderstron, SW cor. NE NW Section 21-17-13w, wildcat test in Barton County, Kansas, found a showing of oil in the Siliceous lime at 3,510-15 feet. A saturated core was recovered. The test is 15 miles from other production.

Deal Oil & Gas Co. has abandoned its test, No. 1 Kelly-Rolfe, NW cor. SW Section 2-33-2, southeast of Wellington, Sumner County, after finding water at 3,527 feet. A showing of oil was found in Green shale at 3,514-19 feet.

National Refining Co. completed a dry hole at No. 1 Ow, SE cor. NW Section 20-26-7, Butler County, at a total depth of 2,785 feet. Water came into the hole after the tools had penetrated the Mississippi lime.

Shell Petroleum Corp.'s No. 5-B Meyers, SE cor. Section 14-19-2w, is the largest Viola lime oil producer in Ritz-Canton district of McPherson County. It is rated at 989 bbls. a day. When the well was completed it extended production in this section to the west.

NORTH TEXAS

FORT WORTH, Tex., Jan. 30.—Texas Co. has staked location for its No. 4 Les K. Johnson, to the north and west of the discovery well on the extreme west edge of Foard County in the Wichita Falls district.

DEATH OF H. L. JACOBUS

Harry L. Jacobus, oil man and tobacconist, who died in Tulsa on January 15, from the effects of heart disease, was one of the best known and most highly regarded men in the Mid-Continent oil field. Years ago when engaged in the oil business he bought a cigar store as a side line, and becoming interested in the business he built the one stand into a string of stands occupying places in the largest hotels and public buildings in Tulsa. He was married to Genevieve, daughter of David F. Connolly, nationally known oil man, who survives him, together with one son and daughter. The death of Mr. Jacobus was a matter of deep regret to a host of friends and admirers. Deceased was a graduate of Ohio Wesleyan University and a Spanish War veteran.

Doom of East Texas Hot Oil Producer Sounded by Latest Federal Activity

By L. E. BREDBERG

DALLAS, Tex., Jan. 29.—The decision by Attorney General Cummings and Administrator Ickes, to expedite proceedings against East Texas violators, will save several weeks in trying each new offender and speed action in eliminating hot oil. The state attorney general's department is now also busy holding daily courts of inquiry at Longview and getting facts with which to prosecute offenders. Bailey Sheppard, assistant attorney general, and Perry Meredith, justice of the peace at Longview, are quizzing landowners, royalty owners, producers, truck drivers, pipe line men and others. Several violators, subpoeaned by this court, have left the State.

Attorney General at Work

The state attorney general's department is now working through the comptroller's department for figures on refining operations.

Hot oil in the field is now running around 35,000 bbls. per day and is believed to be dropping since the courts of inquiry have been started.

Ingenuity of Violators

The methods of circumventing the regulations are many and varied. One party is known to have operated by moving "hot oil" allegedly under false affidavits of origin, and swearing that the oil was topped crude instead of raw crude. Hot oil producers often produce their wells without igniting and burning the gas produced. Such an omission and violation of a Railroad Commission order has just resulted in the death of a young woman who was fatally burned when driving through an area in which gas had collected and settled along the ground igniting from the exhaust of the automobile in which she and her brother were riding. Two negroes were also burned to death when they started a fire in their shanty on a lease on which hot oil was being produced and the gas was set free.

Reversed valves have been used in violating, being sealed open instead of shut as the investigators thought when they were asked to seal the valves.

Gas separators have been found inside of lease tanks, and in one instance five gas separators are said to be locked in an old house with wells on the lease and surrounding leases flowing through these separators and out through hidden lines.

A by-pass was found in a bathroom of one home investigators being thwarted in their trials to ascertain where the by-pass was hidden by having the woman of the house lock herself in the bathroom when the investigators appeared.

Some 1,996 violations were turned in by the Kilgore office of the Railroad Commission in 1933, but only fines have been paid as punishment. Injunctions have been issued against violators, only to be disregarded time and again. An injunction means nothing to a violator, and just recently a Federal injunction has been disregarded. There were 529 injunctions granted in district courts in 1933 and 32 receiverships issued against persons violating injunctions, and in one or two cases receivers were caught doing the same thing. The commission is now working to throw all violators into receivership.

Cut-Price Oil

The courts of inquiry have brought out that many violators are paying only 35 cents per barrel for "hot oil" and one court established the fact that as low as 25 cents per barrel had been paid recently.

Offset lease owners can show wells which are and have been overproducing, and show pumps which have run night and day in pumping oil from leases, or through gathering lines. They know that violations have been and are taking place on offset leases but of course cannot tell how much is being overproduced. Violators who have their wells connected to gas lines from gas plants in the field have been known to run their regular quota of gas to these plants according to the amount of legal oil they produce from their wells, and by-pass the extra gas which is produced with the illegal oil.

Some violators sell a large quantity of crude to reclaiming plants, flowing as high as 1,000 bbls. into slush pits and flow tanks when completing their wells, whereas it was proven in one hearing that only from 20 to 50 bbls. production is necessary when bringing in a new well. These plants are also under strict surveillance with some of them "getting right," according to those in charge of the commission's forces in the field.

Capt. E. N. Stanley, in charge of enforcement in the field for the Railroad Commission, says he believes "hot oil" production in January would prove to be the smallest since last September.

Two operators in the Kilgore area have approximately 148,000 bbls. of oil in storage on which they recently paid a fine of $30,000, $15,000 of which went for attorney's fees, $10,000 to the State, and $5,000 to the Federal Government.

Gasoline Production

The comptroller's department shows the following amounts of gasoline refined in 56 East Texas plants from February to November, 1933: February, 2,720,144 gallons; March, 4,025,643 gallons; April, 5,569,476 gallons; May, 7,254,938 gallons; June, 6,872,908 gallons; July, 7,165,528 gallons; August, 8,903,963 gallons; September, 9,042,866 gallons; October, 9,916,939 gallons, and November, 7,372,365 gallons. Taxes were paid to the State on these amounts. October showed the highest gallonage, due to major purchasers taking surplus gasoline off the hands of the small plant owners in the field. The larger refiners in the field are: Beacon Oil & Refining Co., at Henderson; East Texas Oil Refining Co., Longview; McMurrary Brothers, Arp; Overton Refining Co., Overton; Kilgore Refining Co., Kilgore; and Taylor Refining Co., at Tyler.

In many cases major pipe lines are tied into violators' wells or are taking oil from gathering lines connected to these wells. The majors take the legal output from these producers, but the producers in turn violate regulations, overproduce their wells and sell the overproduced oil to some other purchasers or run it to near-by refineries.

Bottom Hole Pressure

The engineering department of the Railroad Commission announced this week that average bottom hole pressure in the field showed an increase of 5 pounds during five weeks ending January 17. This puts the bottom hole average up to 1,274 pounds. The potential production from 12,142 wells was given as 7,793,268 bbls. in a day and the daily allowable is 398,158 bbls. There are 1,699 marginal wells in the field. However, regardless of this increase in bottom hole pressures some wells are being put on the pump. Still others are flowing now whereas previously they were pumping.

The "Fortress of Gladewater" well, well known to those who have been watching developments and efforts to prorate production in the fields, has been making a large amount of salt water and has been plugged back to shut off the water. This well is surrounded by a concrete "block house" apparently for the purpose of keeping out investigators, and considerable litigation has been caused by the structure and alleged violations of the well. It is in the Gladewater townsite on the west edge of the field and other wells around it have been making various percentages of salt water.

Under Control Soon

Hot oil will very soon be a thing of the past in Texas, Fred M. Lege, Jr., chairman of the Texas Marketing Code Committee, said Saturday on his return with a special committee of five from Washington, where they spent two weeks informing national officials of real oil conditions in the State.

Through co-operation of Secretary of the Interior Harold L. Ickes and others, 20 additional investigators, 15 of whom will work out of Dallas, will be assigned to make cases on hot oil violations, Mr. Lege reported.

Industry Will Re-Sign Agreements as Revised

(Continued from Page 7)

Harold B. Stone, and W. M. Irish; Associated Oil Co., Robert Mikeley; Aetna Oil Service, Inc., W. R. Abbott; Cities Service Co., W. A. Sinsheimer, F. R. Coates, Charles E. Gately, and Harry D. Frueauff; Continental Oil Co., James J. Cosgrove; Globe Oil & Refining Co., A. E. Landsittel; Gulf Refining Co., W. V. Hartman, O. H. Carlisle, and J. F. Drake: Johnson Oil Refining Co., G. C. Lilly, and I. H. Johnson; Magnolia Petroleum Co., Fred M. Lege, Jr.; Mid-Continent Petroleum Corp., R. W. McDowell; Moutray Oil Co., T. E. McGlathery; Ohio Oil Co., C. H. Gompf, and O. D. Donnell; Olney Oil & Refining Co., D. G. Gray; Panhandle Refining Co., D. G. Gray; Phillips Petroleum Co., H. A. Trower; Plymouth Oil Co., W. S. Hallanan; Petroleum Administrative Board, J. W. Steele, and R. Gordon Lowe; Pure Oil Co., H. M. Dawes, George C. Morris, L. S. Wescoat, and C. B. Watson; Rock Island Refining Co., L. E. Kincannon; Standard Oil Co. of Nebraska, A. H. Richardson; Standard Oil Co. of California, J. L. Quinn; Standard Oil Co. (Indiana), Allan Jackson, E. J. Bullock, L. L. Stephens, and C. H. Thompson; Standard Oil Co. of New Jersey, R. G. Stewart, W. S. Farish, and E. S. Hall; Standard Oil Co. of Ohio, W. W. Maxwell; Standard Oil Co. of Kentucky, W. G. Violotte; Sinclair Refining Co., J. W. Carnes, Roy T. Osborn, and H. R. Gallagher; Socony-Vacuum Corp., H. J. Muller, C. E. Arnott, H. T. Ashton, H. A. Coffin, Bryan S. Reid, and C. L. Jones; Skelly Oil Co., W. G. Skelly; Sun Oil Co., J. Pew, Jr., and J. Howard Pew; Shell Union Oil Co., R. G. A. Van der Woude, and J. C. Van Eck; South Penn Oil Co., P. H. Curry, John S. Harp, and John L. Hays; Taxman Refining Co., J. J. Taxman; Tide Water Oil Co., J. D. Collins, and E. L. Shea; Texas Co., Will Dodge, W. S. S. Rodgers, C. B. Ames, and George H. Ray; Texas Oil Products Co., C. R. Starnes; Texas Pacific Coal & Oil Co., O. E. Mitchell; Union Oil Co. of California, Fayette B. Dow; Vickers Petroleum Co., J. A. Vickers; Waggoner Refining Co., D. G. Gray; Wilcox Oil & Gas Co., G. A. Dye.

The list of representatives attending the meeting called for discussion of the pooling and marketing agreements at the Washington Hotel, January 25, included the above list and the following:

Hines H. Baker, Humble Oil & Refining Co.; R. H. Fletcher, Ohio Oil Co.; Quinn Shaughnessy, Petroleum Administrative Board; W. Gould, Cyrus S. Gentry and H. Jacobs, Shell Union Oil Co., and W. N. Davis, Phillips Petroleum Co.

May Meet Monday

A meeting of the signatories to the agreements may probably be held Monday. No date has been set. All is yet tentative, but it is extremely doubtful a meeting can be held this week.

The Code of Fair Competition for the American Petroleum Equipment Industry and Trade was approved by President Franklin D. Roosevelt on November 2, 1933. All firms engaged in the business of manufacturing machinery and equipment or selling supplies used in the petroleum industry will become members of this Code.

●

The Continental Supply Company is a member of the Code of Fair Competition for the American Petroleum Equipment Industry and Trade.

THE CONTINENTAL SUPPLY COMPANY

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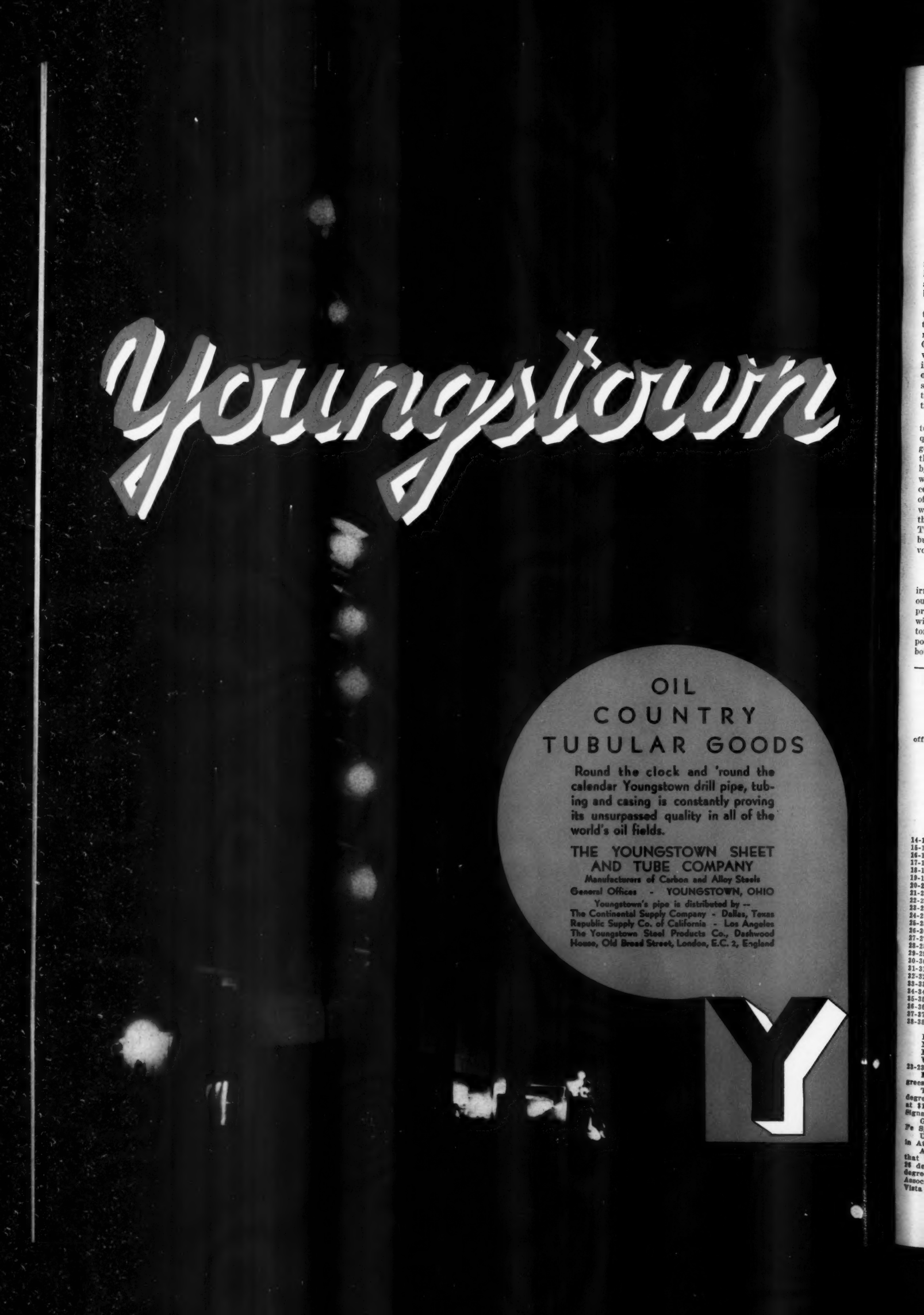
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Y

Improvement in Chicago Tank Car Market Recorded During the Past Few Days

BY SPECIAL CORRESPONDENT

CHICAGO, Jan. 29.—Improvement has been recorded in the tank car gasoline market in the past few days here, revealing a steadily progressing encouragement on the part of sellers. Price gains have extended themselves fractionally and current ruling quotations are the best of those of the move.

While refiners were disappointed by the hitch in the plans for getting out the new contracts optimism in the spot market continued to make itself felt. Gasoline appeared to be steadily a more wanted product. Various sources active in offering material for months were out of the market. It has been a long time since there were so few sellers willing to accept orders for substantial quantities of material.

Car lot marketers who had offered material a few days earlier in fairly liberal quantities were more concerned about getting out shipments from refiners and their ability to deliver material wanted by their customers. Refiners were unwilling to sell for advance shipment except at materially higher prices, most of them demanding shipping instructions with order. The talk among refiners at this time is for a still stronger market. They report getting a large amount of business on contract and a fairly good volume of spot business.

Some Market Irregularity

It is true that a certain amount of irregularity exists in the general market outlook. Tank wagon and service station prices have not been entirely correlated with improvement in tank car market tone, and occasionally outbreaks are reported in retail prices. A little gasoline bought at earlier levels is still available, but on the whole low octane material is near 4 cents and middle bracket material approaching 5 cents.

Firmer conditions in the casinghead market has been aiding the tone of the refinery gasoline market. Still, the straight high gravity materials have not shown as much improvement as motor grades. Part of the better tone in the tank car situation arises from the good scale of consumption in the central states most of January, with weather open in most regions. Jobbers and major companies alike have been reporting good business. Jobbers' gasoline stocks so far as can be learned are still rather low.

Kerosene Dull

Kerosene remains dull. Touches of low temperature have sufficed to keep high grade distillates and zero gas oils moderately firm, along with refiners' action in switching from distillate to kerosene output in some cases.

Heating Oil Demand

With the good grades of burning oil holding firm under moderate weather conditions, the trade at large believes normal winter weather the rest of the winter could be expected to see a strong market situation. Consumer demand has been below expectations. The good grades of fuels are still holding their own, particularly No. 3 grade.

All the industrial fuels and gas oils are quiet, with demand limited and spotty. Relative firmness in crude is a factor. Few refiners are offering much of these items.

Lubricants

Current trade reports of impending advance in various grades of retail motor oil prices are further bolstering the wholesale lub market, both eastern and Mid-Continent. Trade buying is reported fairly good. Some quarters expect additional bright stock advances.

Petroleum Coke

Similarly, petroleum coke is reflecting a fair, although not an extremely heavy demand.

Wax

Wax is fully maintaining its recent strong position and some consider it likely to move higher, with a persistently good inquiry and actual demand domestic and foreign.

Naphthas

Naphthas and solvents appear to be moderately well stabilized and inclined to reveal little feature. Paint concerns and others are taking out fairly good quantities with spring approaching. Tank wagon prices of the business are holding unchanged, and are not expected to be changed generally in the near future.

NATURAL GAS CHEAPER

CALGARY, Alberta, Jan. 27.—A recent investigation by the Calgary city commissioners into the comparative cost of heating the city hall by coal and gas indicated that coal heating cost $4,000 a year while gas heating averaged $1,800 a year.

Crude Oil Prices

(Continued from Page 25)

Effective September 29 in Salt Flat by Shell Petroleum Corp.

Rocky Mountain States

Iles, light (Sept. 29, 1933)	$.96
Iles, heavy (Sept. 29, 1933)	.90
Florence, Colo. (June 17, 1933)	.30
Fort Collins and Wellington, Colo. (June 17)	(See Salt Creek prices)
Big Muddy (Sept. 29, 1933)	1.01
Frannie, light (Sept. 29, 1933)	.87
Frannie, heavy (Sept. 29, 1933)	.63
Salt Creek and LaBarge (Sept. 9, 1933)	See Stanolind Mid-Continent price schedule
Grass Creek, light (Sept. 29, 1933)	1.18
Grass Creek, heavy (Dec. 15, 1932)	.45
Elk Basin (Sept. 29, 1933)	1.18
Rock Creek (Sept. 29, 1933)	1.02
Dutton Creek (July 8, 1933)	See Mid-Continent gravity prices
Lance Creek (Dec. 16, 1932)	.92
Poison Spider (Mar. 5, 1931)	.70
Hudson (June 2, 1931)	.85
Lander (Mar. 5, 1931)	.40
Rex Lake (Feb. 22, 1930)	1.10
Osage (Jan. 18, 1933)	.52
Lost Soldier (Sept. 30, 1933)	.38
Hamilton Dome (Dec. 16, 1932)	.25
Torchlight (Sept. 29, 1933)	1.18
Greybull (Sept. 29, 1933)	1.18
Pondera	1.15
Sunburst (Sept. 29, 1933)	1.35
Cat Creek, Montana	1.07
Hogback (Sept. 29, 1933)	1.11
Lea County, N. Mex. (Sept. 29, 1933)	.75
Maljamar (Sept. 29, 1933)	.70
Artesia-Jackson (Dec. 1, 1933)*	.75

Note—Salt Creek, Torchlight, Elk Basin, Grass Creek, Frannie, Greybull, Hogback and Iles by Stanolind Oil & Gas Co. Elk Basin, Grass Creek light, Big Muddy, Rock Creek and Sunburst by Ohio Oil Co. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Lea County, effective September 29, 1933, by Humble Oil & Refining Co. and other buyers; Fort Collins, Wellington, Orchard, Florence, Big Muddy, Cat Creek, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro.

*Continental Oil Co.

North Louisiana and Arkansas

Smackover, Ark. (all grades)	$.70
Tullos-Urania, La. (Jan. 13, 1934)	.87
Nevada, Ark. (Sept. 29, 1933)	.60
East El Dorado (Sept. 29, 1933)	.70
Other fields	(See gravity table)

Note—Smackover: Effective September 29, 1933, Texas Co., Magnolia Petroleum Co., Standard of Louisiana, Louisiana Oil Refining Corp., Gulf Refining Co. and Phillips Petroleum Co. East El Dorado posted by Magnolia Petroleum Co. and Gulf Refining Co., Nevada by Standard Oil Co. of Louisiana. Urania posted by H. L. Hunt, Inc., and Louisiana Oil Refining Co.

Eastern States

TIDE WATER PIPE CO.
(Effective October 4, 1933)

Bradford, Pa.	$2.45
Allegany, N. Y.	2.45

SOUTH PENN OIL CO.
(Effective October 4, 1933)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field)	$2.45
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	2.12
Pennsylvania Grade Oil in Eureka Pipe Line lines	2.07
Pennsylvania Grade Oil in Buckeye Pipe Line lines (Jan. 29, 1934)	1.97
Corning Grade Oil in Buckeye Pipe Line Co.'s lines (Oct. 2, 1933)	1.32

PENNZOIL CO.
(Effective October 4, 1933)

Pennsylvania Grade Oil in National Transit Lines:	
Group A (Includes Cochran, Franklin, Hamilton and Doolittle districts.)	$2.37
Group B (Includes Titusville district.)	2.36
Group C (Includes Turkey and Tidioute districts.)	2.35
Group D (Includes Bear Creek and Porkey districts.)	2.34
Group E (Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson, Kennerdell, Emlenton, Tiona, Lacy and Kinzua districts. Price depends on length of pipe line haul to plant at Oil City.	2.32

PURE OIL CO.
(Effective October 4, 1933)

Cabin Creek, W. Va.	$2.17
Bradford Hollow, W. Va.	2.17
Kelly Creek, W. Va.	2.17

Middle Western States

OHIO OIL CO.
(Effective September 29, 1933)

Lima	$1.30
Illinois (Jan. 5, 1934)	1.13
Princeton, Ind. (Jan. 5, 1934)	1.13
Plymouth	Shut in
Western Kentucky	1.18
Midland, Mich. (Sept. 30, 1933)*	1.02
Oceana, Mich. (Oct. 5, 1933)	.90
Somerset, Ky. (Sept. 30, 1933)	1.22
Hart County, Ky. (Oct. 1, 1932)	1.18

*Posted by Pure Oil Co. Producers Pipe Line Co. pays 5 cents per barrel over Pure Oil Co.'s posted price. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and posted price includes premium. Hart County, Kentucky, crude purchased by Stoll Refining Co. Oceana posted by Old Dutch Refining Co. and Naph-Sol Refining Co.

Canada

Ontario (September 9, 1933):	
Petrolia*	$2.10
Oil Springs	2.17
Turner Valley (Dec. 9, 1933):†	
Clear naphtha	$3.15
Discolored naphtha	2.91
Crude oil, 50 gravity	2.66
Crude oil, 45 to 49.9	2.07
Crude oil, 40 to 44.9	1.50

*Imperial Oil, Ltd. †Imperial Oil, Ltd., and Regal Oil & Refining Co.

Mexico

Panuco*	$.72

*F.o.b. ship, based on December transactions and exclusive of production and export taxes and bar dues.

California Crude Oil Prices

STANDARD OIL CO. OF CALIFORNIA
(Effective September 6, 1933)

For current purchases of crude oil at the well (unless otherwise specified). (All gravities above those quoted take highest price offered in that field.)

Gravity—	Long Beach	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda, Brea Canyon	Athens-Rosecrans	Torrance	Richfield	Whittier, La Habra	Montebello	Santa Fe Springs	La Habra-Coyote	Midway-Sunset, Elk Hills, Buena Vista Hills	Lost Hills	Coalinga	Coyote
14-14.9	$.65	$.65	$.65	$.65	$.65	$.65	....	$.65	$.65	$.65	$.65	....	$.65	$.57	$.57	$.57	$.65
15-15.9	.65	.65	.69	.69	.66	.69	....	.66	.65	.65	.65	....	.65	....	....	....	.65
16-16.9	.66	.65	.72	.73	.69	.73	....	.69	.67	.68	.65	....	.65	....	....	....	.65
17-17.9	.69	.65	.75	.76	.72	.76	....	.72	.70	.71	.65	....	.68	....	....	....	.68
18-18.9	.72	.65	.78	.80	.76	.79	....	.75	.74	.74	.65	....	.71	.61	.61	.59	.71
19-19.9	.75	.65	.81	.83	.80	.82	....	.78	.78	.78	.65	....	.74	.64	.65	.62	.74
20-20.9	.78	.68	.83	.87	.83	.85	....	.81	.82	.81	.66	....	.78	.67	.69	.65	.78
21-21.9	.81	.72	.86	.90	.87	.88	....	.83	.85	.84	.69	$.72	.81	.70	.73	.68	.81
22-22.9	.84	.76	.89	.94	.90	.92	....	.85	.89	.87	.72	.76	.84	.73	.76	.72	.84
23-23.9	.88	.81	.92	.97	.94	.95	$.83	.89	.93	.90	.76	.79	.87	.77	.79	.75	.87
24-24.9	.91	.85	.95	1.01	.97	.98	.86	.92	.97	.93	.80	.83	.90	.81	.82	.78	.90
25-25.9	.94	.89	.98	....	1.00	1.01	.90	.95	1.00	....	.85	.87	.93	.85	.85	.81	.93
26-26.9	.97	.93	1.01	....	1.04	1.04	.94	.98	1.04	....	.89	.90	.96	.89	.88	....	.96
27-27.9	1.00	.98	1.04	....	....	1.07	.97	....	1.08	....	....	.94	.99	.93	.91	....	.99
28-28.9	1.03	1.02	1.07	....	....	1.10	1.01	....	1.11	....	....	.98	1.02	.97	.94	....	1.02
29-29.9	1.06	1.05	1.09	....	....	....	1.04	....	1.15	....	....	1.01	1.05	1.01	.97	....	1.05
30-30.9	1.09	1.10	1.12	....	....	....	1.08	....	....	....	....	1.05	1.09	1.05	1.00	....	1.09
31-31.9	....	....	....	....	....	....	1.12	....	....	....	....	1.08	1.12	1.09	....	....	1.12
32-32.9	....	....	....	....	....	....	1.15	....	....	....	....	1.12	1.15	1.13	....	....	1.15
33-33.9	....	....	....	....	....	....	....	....	....	....	....	1.16	1.18	1.17	....	....	1.18
34-34.9	....	....	....	....	....	....	....	....	....	....	....	1.19	1.21	....	....	....	1.21
35-35.9	....	....	....	....	....	....	....	....	....	....	....	1.23	....	....	....	....	....
36-36.9	....	....	....	....	....	....	....	....	....	....	....	1.26	....	....	....	....	....
37-37.9	....	....	....	....	....	....	....	....	....	....	....	1.30	....	....	....	....	....
38-38.9	....	....	....	....	....	....	....	....	....	....	....	1.34	....	....	....	....	....

Additional Standard Oil Quotations

Elwood Terrac—F.o.b. ship, 23 degrees, $1.03; 34 degrees, $1.06; 35-35.9, $1.09; 36-36.9, $1.12; 37 degrees and over, $1.15.

Newhall—14 degrees and over, 57 cents.

McKittrick and Kern River—14 degrees and over, 57 cents.

Wheeler Ridge—14 to 17.9 degrees, 57 cents; 18-18.9, 58 cents; 19-19.9, 61 cents; 20-20.9, 64 cents; 21-21.9, 67 cents; 22-22.9, 70 cents; 23-23.9, 73 cents; 24-24.9, 76 cents; 25 degrees and over, 79 cents.

Kettleman Hills—32-32.9 degrees, 93 cents; 34-34.9, 96 cents; 35-35.9, 99 cents; 36-36.9, $1.02; 37-37.9, $1.05; 38-38.9, $1.08; 39 degrees and over, $1.11.

The Texas Co. posted in Shields Canyon, South Mountain and Santa Paula as follows: 14 to 17.9, 57 cents; 3 cents added for each degree up to and including 26-26.9 degrees at 84 cents; then 4 cents added for each degree up to and including 30 degrees and over at $1. Company posts Standard Oil Co.'s Montebello prices in Montebello and North Whittier, and posts Standard Oil Co. prices in Signal Hill, Alamitos Heights, Huntington Beach, Torrance, Richfield and Santa Fe Springs, all effective September 6.

General Petroleum Co. posts Standard Oil Co. prices in Athens, Rosecrans and Signal Hill; Alamitos Heights up to 26-26.9; Santa Fe Springs up to 35-35.9; Richfield up to 25-25.9; Brea Canyon and Olinda up to 25-25.9, and Torrance up to 25-25.9.

Union Oil Co., effective September 6, posts same prices as Standard Oil Co. in all fields in which both purchase, excepting that in Athens-Rosecrans, Union Oil Co. posts 21-21.9, 72 cents, and 33-33.9, $1.13; 34-34.9, $1.21, and 35-35.9, $1.24.

Associated Oil Co., effective September 6, posted same prices for the same grades as Standard Oil Co. of California, excepting that in some fields its gravity scale stops as follows: Huntington Beach, 26 degrees and over; Seal Beach and Alamitos Heights, 26 degrees and over; Coyote Hills, 23 degrees and over; Richfield, 25 degrees and over; Torrance, 25 degrees and over; Inglewood, 24 degrees and over; Santa Fe Springs, 25 degrees and over; Midway-Sunset, Elk Hills, Buena Vista Hills, 30 degrees and over. Also Associated pays 52 cents for oil of 11 to 13.9 gravity in McKittrick, Kern Front, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills and Coalinga.

Specifications Covering Material and Equipment Needed for Coating Pipe Lines With Cement

By J. H. PEPER
Chief Engineer, The Buckeye Pipe Line Co., 26 Broadway, New York City

The advantages and approximate costs of protecting pipe lines by the use of cement coatings were described in the January 4 issue of The Oil and Gas Journal on page 9. In the following portion of this article details are given covering the equipment needed for this work.

All the longitudinal angles, as well as the small angles used at the ends are ordered cut to the proper length. This applies also to the 1½-inch tee iron and the short pieces of 1¾-inch angle used to make the support. The 20-gauge galvanized sheet steel is ordered in the nearest size sheet that will make the bottom section and the two side sections, and then cut to size. It will be noted that the top angle of the two side sections is heavier than the other angles used; this was found quite necessary due to the extra strain put on this member when closing up the form.

It has been found that the ¾"x¾"x⅛" angle used at the end of the bottom is a little light and that the handling and use of the forms has a tendency to straighten these angles away from the true curvature. Using a heavier angle would mean a heavier machine to roll these angles. There has been considered the substitution of a small channel of special section, somewhat similar to that used in automobile manufacture; also to put one of these channel sections in the center of the bottom section. It would probably be easier to roll the small channel than the larger angle due to the symmetry of the former. The ¾"x¾"x⅛" angles have proved to be of sufficient strength for the two side sections.

The 2"x2" reversible butt hinges should be of sturdy construction and the pin should be readily removable; they should also be uniform. No. 12 tinner's rivets are used for fastening the sheet iron to the angle framework, the flat head being placed on the inside of the form. Ordinary buttonhead rivets are used to fasten the hinges to the frame and for other sections requiring rivets.

Tools

All the tools used are "home-made" with the exception of the bench punch. A machine to roll the 20-gauge sheet steel somewhat similar to a tinner's forming machine was made up. This is long enough to take the sheets for the longest forms (8 feet). There was also made up a tool for rolling the ¾"x¾"x⅛" angles for the ends of the bottom section. The angles are clamped at one end on the large circular piece and the large handle which carries the small grooved roller is rotated. There is also another tool for forming the ¾"x¾"x⅛" angles used on the end of the side sections. The small angle sections are heated and set in the grooves of this casting and hammered until they fit the curve of the casting. This tool is also used to smooth out any side kinks in the longer angles that might result from the rolling operation.

A bench punch of standard make is used for punching the holes in angles and sheet steel for riveting them together.

A jig made of a piece of 8-inch pipe, clamps and holds the angles in place for welding. This jig has the necessary holes tapped in it so that the guides can be set for the framework of the standard length of form, both bottom and side sections, as well as the framework of the shorter sections used.

Process

The ¾"x¾"x⅛" angles are first rolled and smoothed up, and then the notches cut in them so that the longitudinal angles fit into these notches. The top angles of the bottom sections and the bottom angles of the side sections are drilled and hinges riveted on before being welded to the end angles.

To insure interchangeability between bottom and side sections, master angles with the half of the hinge riveted on are fastened to a wooden plank. When drilling the angles for hinges, the proper mate is used; the part of the hinge coupled to the master and the angle drilled through the holes in the hinges. This insures that any side section will fit any bottom section on either side.

The holes for the hanger rods are then drilled in the top angles of the bottom section.

The longitudinal and end angles are then clamped to the jig for welding, the guides and clamps being set for the particular section that is being made. Acetylene welding is used to fasten the angles together; but believe, if an electric welding machine were available, a quicker job could be done by the latter with less danger of warping the angles.

The frames are now ready for the sheet steel. The 20-gauge sheet steel is cut into the proper sizes and rolled to the correct curvature. The sheet iron and frame are clamped together with small "C" clamps and the holes for the tinner's rivets punched. Rivets are spaced about every 2 feet on the sides; three are used on the ends of a side section, and at least five on the end of a bottom section. The flat head of the tinner's rivet should be placed on the inside of the form.

The tee iron and the short lengths of angle iron which make up the main support for the form on the pipe are ordered the correct length. All the holes to be drilled in them are marked off from a standard template and the holes are drilled and rivets put in. It is necessary to have a few of these supports with the vertical angle which rests on the pipe about one-half inch shorter than standard, so that if a support happens to come at a collar on the pipe, the shorter one can be used.

The hanger rods and clips are made by forming over a solid piece of steel which insures a uniform length. The length of these hanger rods should be very carefully checked by placing the support on a piece of pipe and actually hanging the form to see that the length is correct for proper centering of the form. The upper angle on these hanger rods should be somewhat greater than 90° to facilitate putting them on and taking them off. Also the edge of the tee iron support where these hanger rods rest should be ground off a little rounding for the same reason.

As mentioned above, the hinges are riveted on the angles. However, if electric welding equipment is available, they could be welded on. They cannot be welded on with the oxyacetylene torch because the heat of this process warps the angle iron too much. The method of fastening the hinges by riveting has the advantage of easily replacing the hinge in case of breakage in its proper location by using the original rivet holes.

Sections of tee iron 2"x2"x½", 8 inches long, are used for placing on top of the skids supporting the pipe over the ditch so that the forms can be brought closer together at these points and thus reduce the amount to be patched. These are ordered cut to length, and a small V-notch is ground in the center of the top to keep the pipe from sliding off.

The patch forms which are used to patch the places of support at the skids are of much lighter construction than the regular forms. Some of these forms are 2 feet long and some 4 feet long. The 2-foot lengths have been found sufficient for almost every need. The only angle used in these forms is on the top to give them stiffness where the form is pulled together. For the ends, No. 10"x1" strap iron is used and this is readily bent. The ends of these pieces are bent over to form a hook for the support. The support is a piece of No. 10"x1" strap bent with a hook on each end. A wedge-shaped piece of wood is used under these supporting straps so that any irregularities in the concrete, already on the pipe, can be taken care of. Of course, these patch forms used to patch places between concrete that has already been placed on the pipe and the ends of the form therefore fit over the concrete. The side sections of the patch forms are, of course, made about 2 inches shorter than the bottom sections to give room for the supporting strap.

Method of Using Forms in Field

After the pipe is uncovered and raised out of the ditch and the cleaner run over it, the skids are accurately located at 40-foot 6-inch intervals so as to allow five 8-foot sections to be set between skids. At this time the tee sections are placed on the skids. If there is anything on the pipe, for example a clamp that would interfere with putting on the forms, the skid should be placed under or near the obstruction and the spacing of skids started from this point.

After the skids have been properly placed, the forms are strung out along the line with the supports, hanger rods, clips, etc., laid at the proper points. Should there be a bend in the line that would prevent using the 8-foot forms, forms of the shorter length will have to be used.

The tar paper used for lining the forms is the cheapest grade of slater's felt obtainable, costing a little less than $1 per roll of 500 square feet. Unfortunately, the rolls are a little too long to give the proper width to go around an 8-inch pipe, so that about 6 -inches must be sawed off the roll before it is unrolled. The paper is unrolled and cut to lengths of about 8 feet 6 inches, which gives about 6 inches overlap at the junction of the forms. These lengths are put up in rolls ready for use on the job. These pieces of tar paper are laid out along the line at the same time the forms are laid out. Also at every skid there must be an extra support and two pieces one-half inch square packing.

The procedure of applying the forms is approximately as follows: The man at the point of beginning takes one piece of tar paper rolled up, and straddles the pipe; another man straddles the pipe at the other end of the form. The first man wraps the packing around the pipe and holds it in place with one hand and the other flips the paper along the top of the pipe, and the other man takes the end and the two wrap it around the pipe. When this is done, the men standing by place a support on the pipe at each end; two men take the form and pass it under the pipe and another man takes it from the other side and so brings it into place and holds it. The two men straddling the pipe release the paper which settles into the form. They are then handed the hanger rods which they fasten to the form and the support and the form is released by the men holding it. This process continues until all the forms are on. With a little practice, the men become very proficient.

The piles of sand are placed at such intervals as to avoid carrying the cement mortar very far in either direction. The mixer is brought up to the first pile of sand, as well as the truck with the water and cement. A mortar box is used to receive the mixed concrete from the mixer, so there is always a supply ready for the men carrying same to the forms.

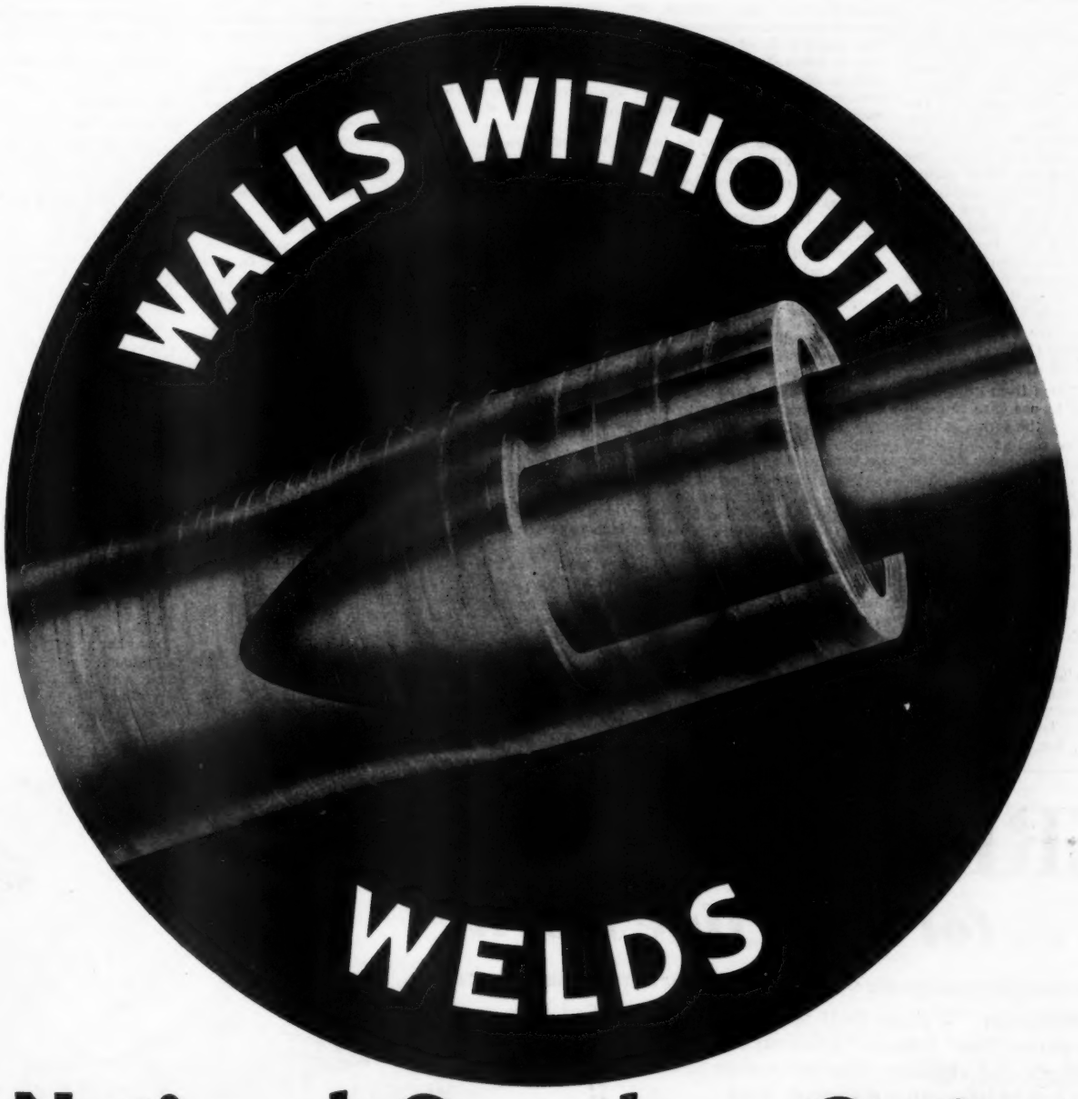
Administrator's Report on Crude Stocks

Stocks of domestic and foreign crude petroleum at the close of the week ended January 20 totaled 342,320,000 bbls., a decrease of 574,000 bbls. from the total of 342,894,000 bbls. on hand at the end of the preceding week, Harold L. Ickes, Secretary of the Interior and administrator of the code of fair competition for the petroleum industry, announced today. This decrease, which represents a daily average withdrawal of 82,000 bbls., comprised a decrease of 518,000 bbls. in domestic crude stocks and a decline of 56,000 bbls. in foreign crude stocks. This decline in total crude stocks follows a comparable increase in the previous week.

Current reports of the oil industry point to material gains in both crude runs to stills and exports during the week ended January 20. Imports of crude petroleum remained at about the level of the previous week, that is, at 100,000 bbls. daily. The approximate daily average balance of crude oil during the week ended January 20 was as follows (barrels): Production, 2,345,000; imports, 100,000, decrease in stocks, 82,000, equals runs to stills, 2,395,000; exports, fuel, losses, etc., 132,000.

CRUDE PETROLEUM STOCKS REPORTED BY COMPANIES HOLDING 100,000 BBLS. OR MORE

Grade of crude oil—	Stocks held by reporting companies Jan. 13,1934 (bbls.)	Jan. 20, 1934 (bbls.)	Change from Jan. 13, 1934 (bbls.)
Pennsylvania Grade	5,366,000	5,361,000	—5,000
Other Appalachian, including Kentucky	1,259,000	1,260,000	+1,000
Lima-N. E. Indiana-Michigan	1,710,000	1,706,000	—4,000
Illinois-S. W. Indiana	11,320,000	11,403,000	+83,000
North Louisiana and Arkansas	12,077,000	12,012,000	—65,000
West Texas and S. E. New Mexico	31,873,000	31,706,000	—167,000
East Texas	44.065,000	43,842,000	—223,000
Other Mid-Continent	154,199,000	154,484,000	+285,000
Gulf Coast	16,455,000	16,306,000	—149,000
Rocky Mountain	27,192,000	27,206,000	+14,000
California	34,240,000	33,952,000	—288,000
Total domestic crude	339,756,000	339,238,000	—518,000
Foreign crude	3,138,000	3,082,000	—56,000
Total crude	342,894,000	342,320,000	—574,000



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No chance—no uncertainty about the uniform wall strength of NATIONAL A. P. I. Diamond BX and B8 Seamless Casing! One continuous piece of steel pierced from the solid—expanded and rolled at temperatures which produce grain refinement and uniform transverse and longitudinal strength. A balanced, homogeneous unit—unsurpassed from a manufacturing standpoint. Tried and tested under every known service condition, it has the unqualified approval of operators and casing crews. Smooth running and greater security have made NATIONAL Seamless—

America's Preferred Casing

NATIONAL TUBE COMPANY · PITTSBURGH, PA.

SUBSIDIARY OF UNITED STATES STEEL CORPORATION

A heavy concrete pail is used to carry the concrete. The mortar is mixed to such a consistency that it will flow readily around the pipe and run along between the form and the pipe. In filling the forms, the top sections are moved away from the pipe rotating about the hinges, thus forming a trough for the reception of the cement mortar.

The first form is thus opened and filled to the proper level so as to completely fill the form when closed. (A little practice will determine just how much to put in.) This form is left open until the next one has been filled to the proper level. The mortar forces the paper tightly against the form and also presses the overlapping paper from one form against paper of the adjacent form, making a tight joint. The first form is now closed as far as possible by hand, then closing toggle is applied and the form closed tightly and holding clips applied. Two men follow up the pouring men and close the forms as soon as ready; the mixer is moved from one pile of sand to the next until the forms are all filled. The forms are left on until the next morning when they are removed and moved ahead.

In removing the forms from green concrete, it is necessary to use care to avoid any scraping motion of the forms against the sides of the green coating. The clips should first be removed and the side sections swung outward so as to be clear of the coating. Two men at each end of a form take hold of the opened sides and keep the form held up while the hanger rods are slipped off the supports. They then lower the whole form to clear the bottom of the pipe and swing it out sideways. The supports are then removed by tapping with a hammer and the holes left by their legs are plugged with cement.

The tar paper adheres to the cement and forms a protection for it as well as holding in the moisture. In favorable weather the line may be lowered into the ditch the next day, but in cool weather it is better to allow it to remain undisturbed an extra day.

In lowering the line, the sling or lowering tongs are placed on the pipe at the spaces left between the forms at the skids. It is advisable in lowering the line to use at least four windlasses to avoid undue bending of the pipe. Before lowering the line, spaces are cleared where the skids are located to facilitate the application of the patch forms when line is lowered. The patch forms are then put in place and poured and allowed to set until the next day. After their removal the ditch is ready for filling.

Cautions to Be Observed in the Making and Use of Forms

Hanger rods must be checked before sending the forms into the field to make sure of the proper length for centering the form. At the beginning and end of a section of forms where the one-half inch square packing is used, the hanger rods should go on tightly. This indicates proper centering.

The clips that fasten the top of the forms should also be carefully checked for length. It is better to err in making them too long rather than too short. If too short, they force the top edges of the side sections too close to the pipe, making the cement thin at this point and liable to cause cracking.

When filling the forms with the cement mortar, do not use any bent hoop iron to pack the cement between the pipe and the form, as this is apt to tear the paper and allow the cement to come into contact with the form, which will make it impossible to take off the form without damaging the coating. If the cement is mixed to the proper consistency to flow quite freely, a gentle rapping of the side of the bottom form will make certain of an unbroken coating on the bottom of the pipe.

In transporting the form for any great distance, it is better to take the pins out of the hinges and separate the three sections of the forms and pile the different sections together. If the forms are folded up and piled, they are quite likely to be damaged by the jarring in transit. The separated sections should not be piled too high as the excessive weight on the bottom sections is also liable to strain the forms.

Good sharp and well-graded concrete sand should be used, and great care should be taken to avoid any sand having any material percentage of quicksand in the mixture.

In case the forms are being used on pipe that has been emptied of oil and the weather is quite hot, it will be advisable to lay some wet rags over the fresh cement to keep it from drying out too rapidly. If oil is being pumped through the line during the coating process, no difficulty will be experienced from too quickly drying.

At the beginning and end of a string of forms, between skids there will be put two hanger rods to each support. In this case it is advisable to put the hanger rods on opposite sides of the center flange of the tee iron supports. This obviates any tendency of the support to tip over along the length of the pipe.

In places where there are clamps on the line to be coated, these places have to be patched after the line is lowered into the ditch by using a short wooden form made of odd pieces of lumber. This form is not usually taken off, but left on and filled over.

Equipment Necessary for Concreting 1,000 Feet of Pipe per Day

125—8-foot forms.
6—6-foot forms.
6—4-foot forms.
6—2-foot forms.
25—Patch forms.
175—Supports.
700—Hanger rods.
400—Clips.
125—Tee irons for skids.
75—Pieces one-half inch square hydraulic packing (about 30 inches long—cheap grade).
1—Small concrete mixer (about 5 cu. ft. capacity).
Water barrels, mortar boxes, etc.

Equipment Dealers and Manufacturers Organize

There will be an organization meeting of the officers and members of the American petroleum equipment industry and trade at the Allis Hotel, Wichita, Kans., on the afternoon and evening of Wednesday, January 31. This meeting is called to permit the manufacturers and dealers in the oil industry apparatus and equipment to form the Kansas section of the Mid-Continent and Rocky Mountain division of this organization which functions under the NRA.

Clyde Ellwood, commissioner of code authority, will attend this meeting from the headquarters for the division in Tulsa and with him will be several of the officials of this division. The Kansas members who will take part are: Jack Farley, president, Farley Machine Works, Arkansas City, Kans.; D. C. Myers, president, F. S. Denison, manager, Exner-Dodge Packer Co., Coffeyville, Kans.; William G. Jensen, Jensen Brothers Manufacturing Co., Coffeyville, Kans.; D. R. Brown, vice president, Oil Country Specialties Manufacturing Co., Coffeyville, Kans.; H. W. Cardwell, president, Allsteel Products Manufacturing Co., Wichita, Kans.; A. A. Buschow, president, Bridgeport Machine Co., Wichita, Kans.; Harry Bernsen, president, Mountain Iron & Supply Co., Wichita, Kans., and E. O. Boggs, president, Federal Supply & Machine Co., Winfield, Kans.

Similar groups in eastern and western Oklahoma have already been organized and with the completion of the Kansas organization the Mid-Continent and Rocky Mountain division will be organized except for Wyoming and Colorado.

HERE'S THE TONG

. . . for pipe line work

The men who use these tongs are quick to sense their outstanding advantages.

First of all, Williams' "Vulcan Boll-Weevil" is a simplified pipe tool—it has only six parts. The "I-beam" construction of its Handle provides extreme strength and rigidity. The reversible Jaws are held securely with *two* bolts—can not spread. And "Vulcan Boll-Weevil" is easy to use. It is applied *on top* of the pipe—never has to be held up.

These features contribute to the long life and low upkeep cost of "Vulcan Boll-Weevils". Available in four sizes, with proof-tested and CERTIFIED chain, for pipe ¾ to 12 inches. See "Composite Catalog", page 514.

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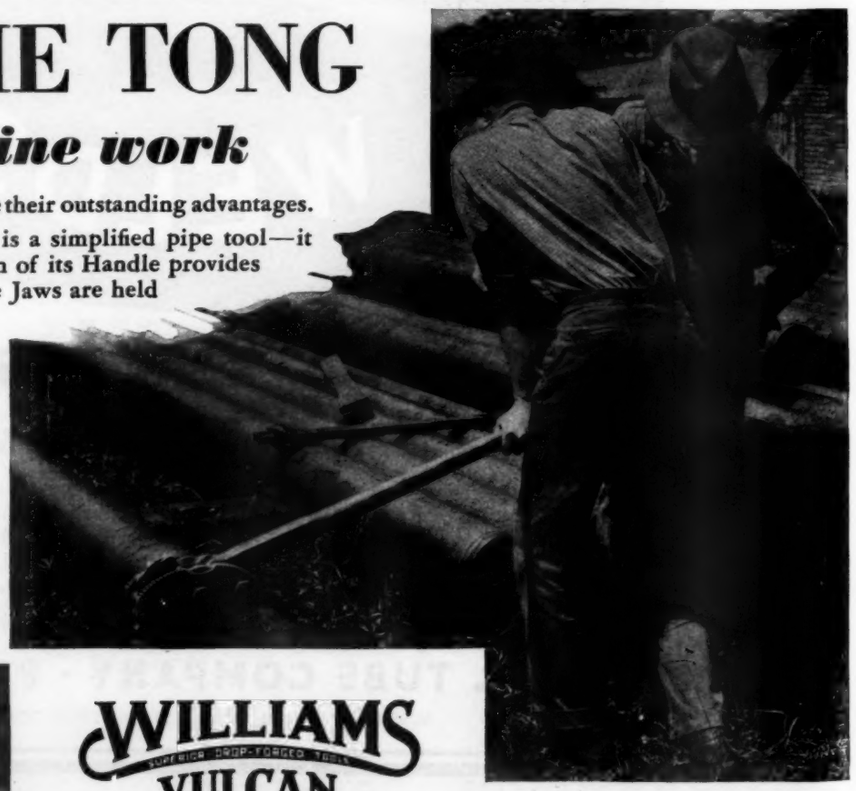


"BREAKING-OUT"
"Vulcan Boll-Weevils" provide for "making-up" and "breaking-out", alternately, without unhooking the chain. Operator never changes his position—merely pushes down or lifts up on the handle.

WILLIAMS
SUPERIOR DROP-FORGED TOOLS
VULCAN
BOLL-WEEVIL
CHAIN PIPE TONGS

EXTRA FLAT CHAINS for the four patterns of Williams' Tongs are interchangeable, size for size, simplifying replacements and reducing your stock.

NRA WE DO OUR PART

WESTERN WAREHOUSE & SALES OFFICE, CHICAGO — WORKS, BUFFALO, N. Y.

Pressure Lubricants for Motor Vehicles

(Continued from Page 6)

machine, using two rolls, should be more nearly comparable to service conditions, because of the similarity in wedging angle in the oil film, and there should be more freedom from the effects of wear than was possible with the Timken machine.

Lubricant Stability

Changes which take place in an extreme pressure lubricant during use may be of two general kinds, the one involving the extreme pressure compound and the other involving the oil. The former is manifested by loss in load-carrying capacity during use, while the latter gives most serious trouble when the oil thickens, probably as the result of oxidation and polymerization.

Considerable data have been obtained at the bureau on the decrease in load-carrying capacity as the result of heating for various periods of time at elevated temperatures. All of the lubricants tested showed a decrease but the extent of the decrease varied considerably with different lubricants. For example, one lubricant decreased in load-carrying capacity by about 30 per cent when heated for four hours at 300° F., whereas another lubricant of approximately the same initial load-carrying capacity showed a decrease of over 90 per cent when heated for the same period of time at the same temperature. Further work along this line is planned.

No investigation has yet been made at the bureau leading towards the development of a test method for changes in the consistency of the lubricant during service. This is a vitally important factor and a satisfactory test method is urgently needed. In fact, due to the instability of mineral oil at high temperatures, it appears that the permissible operating temperature is the factor which at present limits the maximum tooth loads on gears.

Wear

The problem of wear with differential gears operated under high load is a complicated one for so many factors are involved. Any satisfactory test method for wear should simulate service conditions very closely. It is probable that the new lubricant tester will prove to be of considerable assistance in this regard, for it can be operated under a wide variety of conditions and the action between the rolls closely simulates gear action.

There is one phase of the wear problem which is comparatively simple, namely wear due to inherently abrasive material in the lubricant. Some experimental information has been obtained on this phase, using the Timken machine operated under light load. Marked differences were found in the wear obtained with various extreme pressure lubricants. Thus one lubricant showed only about one-half the wear obtained with mineral oil under the same conditions, whereas the wear obtained with another lubricant was almost five times as great as with mineral oil. Further work with the new lubricant tester is contemplated.

Corrosion

No work has yet been undertaken on the development of a significant test method for the corrosiveness of extreme pressure lubricants. The development of such a method involves considerable difficulty.

In order to be effective and form a film on the rubbing surfaces, the lubricant must be somewhat corrosive, in the sense in which this term is ordinarily used in connection with petroleum products. The copper strip test is not a satisfactory measure of corrosiveness as regards extreme pressure lubricants since they ordinarily do not come in contact with copper in service. In fact, in some cases the more rapidly the lubricant attacks the copper strip the higher is its load-carrying capacity, although this is by no means generally true and cannot be used as a criterion for load-carrying capacity. The answer to the problem of developing a significant test for corrosiveness probably lies in the use of metals which actually come in contact with the lubricant in service.

1934 Wildcat Exploration to Prepare for Future

(Continued from Page 10)

leases without drilling obligations. This area has been constantly surveyed during the past 12 months with geophysical instruments and the indications are that the drilling in that area after this date will be on a more intelligent basis.

The result of several wells now drilling in the Miller County area of Southwest Arkansas, will probably determine the amount of drilling in that district during the coming year.

Rocky Mountain Activity

There is a distinct feeling among operators in the Rocky Mountain area that wildcatting in that region in 1934 will take place on a larger scale than in any year since 1929, but conditions are such just at present that one person's guess as to the direction of the play is as good as another. There are several outstanding factors to support the opinion that exploratory work will go ahead on a larger scale. One of these is that there are numerous structures in New Mexico, Colorado, Wyoming, Montana and Utah upon which government permits are held, but on which extensions have been granted for the past several years without compelling the drilling of test wells. The Secretary of the Interior early in December made a decision reaffirming the policy of the oil administration against the imposition of restrictions on drilling on the public land. In that case the drilling company wanted to postpone drilling and the permittee wanted the land explored. The outcome was that the Secretary refused to grant the relief asked by the drilling company. While this decision applied to a case where there was a drilling contract, it is accepted as a declaration of policy. Another factor pointing to an increase in wildcatting is the fact that the Rocky Mountain states as a unit are not producing oil in quantities equal to consumption demand in this territory. A third factor is that the executives of oil companies in making up their 1934 budgets are reported making more liberal allowances for leasing and drilling than for several years past.

In New Mexico it is generally considered that several important pools will be discovered in the southeastern area and during the lull in wildcatting the past few years the drilling companies have been active in making geophysical surveys of the territory. At the beginning of 1934 there were a number of wildcats getting under way. The Gypsy Oil Co. will explore a high in the Cooper area in eastern Eddy County; the Texas Co. has lined up two wildcats in the Pearl area and north of the Lynch Pool in Lea County; and three wells, at least, will be drilled in eastern, southern and western Eddy County. Throughout the State there are a number of scattered wildcats which have been idle for a year or two, but which stand a good chance of being drilled to completion in 1934 as a result of improved conditions for financing tests.

In Colorado, the area east of the mountain range known as northeastern Colorado, will have several tests. The Ramsey Petroleum Corp. is expected to drill on a high north of Limon and continue its search for new production in the New Raymer district where it has one gas well and another which is to be continued as a test to the Lakota. The north end of the Greasewood Pool in Weld County, will be drilled and the probability is that there will be some wildcatting between that district and Denver and farther to the northeast in Logan County. There are several structures on the western slope which are blanketed with permits and drilling contracts, but on which drilling has been postponed for several years. It can not be said definitely as to the extent of the play in that district, but two or more wells are looked upon as certain of drilling.

In Wyoming wildcats are scheduled for drilling on the Goshen Hole Dome in Goshen County, on the Crook's Gap structure in Fremont County and on several structures scattered through the Big Horn Basin. There are several rigs and wells drilled to shallow depths in the fault block areas around producing structures which were idle during 1933, but which are expected to resume in 1934.

The only play definitely in sight in Montana is the testing out of areas around the Cut Bank Field in Glacier County. The South Cut Bank district several miles to the southeast of production was being drilled at the close of the year and the outcome will have an important bearing on future operations. Like the other states, Montana has a number of wildcats which have been standing for a year or two.

Exploratory Work in California

Exploratory work in California during 1934 will be centered for the most part in the San Joaquin Valley, although there is a tendency to broaden the scope of wildcat operations with the result that additional drilling may be anticipated in the northern part of the State and sporadic exploration in Imperial Valley and in the area adjacent to San Diego. Major companies in California have not shown any inclination to engage in promiscuous exploration work, although they can be expected to undertake additional limited prospecting during 1934. At the present time the Union Oil Co. is drilling a semiwildcat in the Union Avenue district of Kern County and the Shell Oil Co. started rig construction for a wildcat to be drilled between the South Belridge and McKittrick Fields. None of the other majors are doing any prospecting work at the present time.

The Milham Exploration Co., discoverer of the Buttonwillow gas field of Kern County and the first operators to develop commercial production in the Kettleman North Dome Field, will shortly institute exploration work in San Joaquin County at a point approximately 1 mile south of the Hetch-Hetchy tunnel. The Milham company recently leased approximately 14,000 acres on the Tracy anticline, located approximately 20 miles southwest of Stockton. Milham's first location will be staked on the Connolly property in Section 5-4-5. This test is being undertaken primarily for the purpose of developing an additional source of natural gas, as the discovery of an important gas field in the central part of the State would be especially valuable due to existing markets in the San Francisco Bay region.

The General Petroleum Corp. has leased approximately 4,500 acres of potential oil and gas land in Paris Valley, located near Salinas in the northern part of Monterey County. The company has not yet indicated when exploration work will be started but it is quite likely that a deep test will be drilled on this lease later in 1934. The General Petroleum is at present concentrating its attention on No. 1 Berry, a deep test which the company is drilling in the South Belridge Field of Kern County. This deep test has been showing up exceptionally well and is of unusual importance to the company due to the General Petroleum's substantial holdings in the South Belridge Field. If the formations logged by the Western Gulf in its Fresno County wildcat are favorable, the company will probably drill a second well in Fresno County later this year. The Western Gulf has blocked out approximately 1,000 acres north of Coalinga and consequently additional exploration work may be anticipated if the formations are at all favorable to the accumulation and retention of oil and gas.

Wildcatting in Canada

With oil and gas production in Canada confined to a few proven areas and with a large part of the country still untested, most of the drilling operations now in progress might correctly be termed wildcatting This applies to tests some of which, reviewed in the Canadian summary, have been in progress for a number of years.

In Alberta, operations already under way in a number of foothills areas will be continued in 1934. The list includes one test on the Hunter Valley structure west of Olds and two in the Moose Mountain area west of Calgary. New ventures are a test by Pekisko Hills Co. on the Pekisko Hills structure, south of Turner Valley, with location in LSD 6, Section 6-17-2w5. Further north, a test is planned for the F. D. Lundy lease on the Birch Ridge structure in Section 6-22-4w5. Dr. F. E. Sandercook and associates of Calgary will probably complete Raven Oils' No. 1, Section 20-9-2w5, on the Watson structure; and on the adjacent Quaich structure, British interests headed by E. H. Cunningham Craig are expected to drill in the spring. While attempts to duplicate the Turner Valley Field in other foothills areas have so far failed, there is always the prospect that one of these new ventures may open a new and prolific field.

In the southern plains area, the Blood Indian Reserve near Lethbridge will, it is expected, be at last given a commercial test by Blood Indian Oils, Ltd., recently organized by Saskatchewan interests. The D. A. McDonald test on the Comrey structure south of Medicine Hat is another venture which may be pushed to a conclusion. Outside these tests, no work in new areas has been definitely planned for the Alberta fields for the coming year.

In Saskatchewan, the 1934 work will include Trail Blazer Oil & Gas Co.'s No. 1 at Hudson Bay Junction, in the north; Lloydminster Gas Co.'s test on the Saskatchewan end of the Ribstone-Blackfoot structure; Blackfoot Oil & Gas Co.'s test south of Regina, and Highwood-Sarcee Oils' test on the Dirt Hills structure. None of these are exactly new ventures.

In Manitoba, Winnipeg and Toronto interests will drill two wells, one south of Melita and the other near Manitou.

In the eastern fields, no new drilling is projected for New Brunswick or Quebec provinces. Any drilling so far announced for the Ontario fields is pretty well restricted to the proven areas in the southwestern part of the province. Two wildcat tests have been mooted, one by the Hockley Valley Oil Co. of Hamilton near the town of Orangeville; and another by E. P. Martyn on the Sparta Ridge south of St. Thomas, in Elgin County.

East Coast Interprets Washington Program

(Continued from Page 23)

and if they are not upset when the figures for the last 10 days become available, the eastern refiners will not have difficulty in keeping their stocks down to the level of 15,020,000 bbls. set by the Government for February 28.

Other Products

All grades of cylinder stocks made from Pennsylvania Grade crude oil are strong in this market and prices for export and domestic movement generally advanced an additional 1 cent per gallon over the past week. This makes a total advance of 3 cents per gallon on most grades since the first of the year. The No. 8 color bright stock in barrels is now generally quoted at 34 to 35 cents in barrels for export movement and 27 to 28 cents per gallon in bulk. The 200-3 color grade of Pennsylvania neutral is quoted at a low of 32 cents in barrels with quotations as high as 36 cents reported.

No important price changes in kerosene, distillate, gas oil and fuel oil were reported during the week. The recent reductions in kerosene tank wagon prices in New York and New England states have not been reflected in lower tank car prices which continue at 5¼ to 5½ cents per gallon. The movement of all grades of furnace oils and range oils is satisfactory to the sellers. No special activity was reported during the week in gas oil and fuels oils but prices continue steady.

Ector County Third Most Active in West Texas; New Producing Area in Wheeler County

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Jan. 29.—Three locations and six completed wells were reported from West Texas during the week. The locations were made in Glasscock, Ward and Winkler Counties.

Frank Gilpen, Jr. and others' No. 1 Blakeney, a wildcat drilling in northern Ector County, in Section 32, Block 43, Township 1n, T.&P. Survey, which had the appearance of making an extension producer to the Cowden area last week, drilled into sulphur water from 4,389 4,405 feet and it was first reported the test would be abandoned. Later reports state the operators are planning to plug back and shoot. It had several small showings of oil from 4,145-4,258 feet and first gas was encountered at 3,915 feet. It is now shut down at a total depth of 4,405 feet.

Atlantic Oil Producing Co.'s No. 1 Jones on the east edge of the Addis area, same county, which opened a deeper pay horizon, is still cleaning out after being shot, and no estimates can be made on what it will make. The hole bridged after being shot with 300 quarts from 4,025-70 feet and 282 quarts from 3,770-3,970 feet. The well flowed 30 bbls. after being shot on January 24.

An unusually large amount of water was encountered in Broderick and Calvert's No. 1-K Cowden, northwest of the Addis Pool. The water showed up after drilling through the regular water sand found around 3,500 feet, which showed dry, and the test is now shut down with a hole full of water at a total depth of 3,675 feet waiting for pipe. The water was encountered from 3,665-75 feet. It is in Section 16, Block 43, Township 2s, T.&P. Survey.

Another location was made in the Addis area by Fred Turner, Jr., for his No. 1-C Addis in Section 35, Block 43, Township 2s, T.&P. Survey. This test makes the sixteenth for the county, 10 of which are active making Ector the third most active county in the district.

Reagan County

In Reagan County, G. R. Snider and Shell Petroleum Corp. have abandoned No. 1 Hughes after getting a hole full of sulphur water at 3,011 feet. It is in Section 14, G.C.&S.F. Survey,

Big Lake Oil Co.'s No. 13-C University, Section 25, Block 9, University Survey, Big Lake Field, Reagan County, was completed during the week for one of the largest wells in the field, having an initial production of 1,200 bbls. of 54 gravity oil and 10,500,000 feet of gas accompanied by a slight trace of salt water, total depth 8,667 feet. It is an extension of about one-half mile north.

Ward County

Gulf Production Co. completed three nice wells in the Hutchings-O'Brien Pool in northern Ward County for an initial production of 1,337 bbls. daily. The company has three other active tests in this area.

Coke County Wildcat

J. S. Dannis and W. J. Upshaw have made a wildcat location for Coke County in Section 8, H.E.&W.T. Survey, about a mile east of Greenland Home and 3¾ miles northwest of Tennyson and 3½ miles north and a little west of Haggerty and others' No. 1 Gaston, dry hole.

Crane-Upton

In the Crane-Upton Field Shell Petroleum Corp. recompleted No. 94 Taylor with acid, bringing production from 1 bbl. per day to 141 bbls. The test was treated with 1,000 gallons of acid, with a 120-bbl. oil load.

Runnels County

Sinclair Prairie Oil Co. has taken over D. D. Thomas and others' No. 1 Wade in the McMillan Pool, Runnels County, in Subdivision No. 10, Norvel Travis Survey, and it is drilling below 875 feet. This is the first major company to enter this field.

J. D. Wesner and Wahlenmaier Petroleum Corp.'s No. 1 Thomas C. Hall, a wildcat in E.T.R.R. Survey No. 149, midway between the McMillan Pool and Ballinger, Runnels County, struck a hole full of water while drilling below 2,100 feet, and the operators are underreaming pipe to shut off the water.

There are six wells producing in the field, six drilling and four locations were made this week.

Ordovician Tests

The Ordovician test in Pecos County, being drilled by the Humble Oil & Refining Co. in Section 44, Block Z, T.C. Survey, is drilling below 7,665 feet. Gulf Production Co.'s Ordovician test in Upton County is drilling below 8,869 feet. It is located in Section 107, Block F, C.C.S.D.&R.G.N.G. Survey.

Terrell County

Sides and others' No. 1 Phelps in Terrell County had another show of gas from 5,220-30 feet and is drilling below 5,250 feet. It will be carried to 6,000 feet. It is in Section 6, Block 4-A, G. W. Truley Survey.

Phillips Petroleum Co. and Tide Water Oil Co. have entered the North Ector County development campaign, making a location for No. 1 O. B. Holt in Section 19, Block A, P.S.L. Survey, a west offset to Continental Oil Co.'s No. 1 Holt, which this week showed 1 bbl. of water per day while drilling at 4,320 feet. The test was plugged back to 4,290 feet, and swabbed 18 bbls. in 24 hours. Location is in Section 19, Block A, P.S.L. Survey.

Panhandle District

In June, 1928, Woodley and others' No. 1 Boyle in the SW cor. of Section 55, Block 13, H.&G.N. Survey, opened another producing area in Wheeler County. This location was approximately 7 miles east of Shamrock and 11 miles southeast of production. A second test was drilled in 1931 by the same operators on the Sloss and Admire ranch, Section 47. The discovery well and second test were small, producing water with the oil, the oil testing 37.5 degrees.

This week R. R. Osborne and others drilled in their No. 1 Sloss and Admire in Section 47, Block 13, proving the best well yet brought in in this area of eastern Wheeler County. It logged the dolomite pay from 2,190-93 feet and came in making 120 bbls. the first 24 hours but fell off to 50 bbls. per day later.

The Shamrock Field, to the northwest, produces good wells from the granite wash, dolomite wells in the county proving less valuable than those producing from the other pay.

Phillips Petroleum Co. has just closed the largest lease deal consummated in the Panhandle district for a long time, taking a 10-year lease on approximately 7,270 acres on the Joe William ranch in Hutchinson County. A part of the block extends over into Moore County. Consideration was in the neighborhood of $120,000. One test is to be drilled immediately with 10 others to be drilled on the block during the tenure of the lease. The first test is to be in Section 40, Block 47, H.&T.C. Survey. One test, previously drilled in Section 43, Block 47, on the block, had a showing of oil with heavy gas production.

Production in the Panhandle district averaged 42,615 bbls. this week, a decrease of 720 bbls. per day under the past week. There are 2,001 wells in the district.

Wildcat Operations in West Texas

Week Ending January 29

Company, well, farm name, section and block—	Remarks:
ANDREWS COUNTY	
Fuhrman Pet. Co.'s No. 1-B Bonner, 1,320 ft. from N line and 1,320 ft. from E line of Sec. 25, Blk. A-43, P.S.L. Sur.	Rig up.
CRANE COUNTY	
Continental Oil Co.'s No. 1-C Cowden, 330 ft. from N line and 1,650 ft. from W line, Sec. 81, Blk. X, C.C.S.D.R.G.&N.G. Sur.	Will treat with acid; pumped 42 bbls. per day after being shot; T.D. 2,755 ft.; plugged back to 2,495 ft.
Gulf Prod. Co.'s No. 1 Edwards, 330 ft. from S line and 330 ft. from E line of Sec. 21, Blk. B-18, Public School Land Sur.	Drlg. 3,792 ft.
Storey, Frievele & Duffy's No. 1 G. L. Brown et al, 330 ft. from N and E lines of Sec. 34, Blk. 43, Twp. 4s, T.&P.R.R. Sur.	Moving in material.
CROCKETT COUNTY	
Porter Rankin's No. 1 Todd, 1,500 ft. from N line and 2,020 ft. from E line of Sec. 66, Blk. UV, G.C.&S.F. Sur.	Machine on ground.
ECTOR COUNTY	
Atlantic Oil & Prod. Co.'s No. 1 Holt, 1,980 ft. from N line and 660 ft. from E line of Sec. 19, Blk. A, P.S.L. Sur.	T.D. 4,320 ft.; showed 1 bbl. of water per day; plugged back to 420 ft.; swabbed 18 bbls. of oil in 24 hrs.
Atlantic Oil & Prod. Co.'s No. 2 Holt, 660 ft. from N line and 1,980 ft. from E line of Sec. 19, Blk. A, P.S.L. Sur.	Location.
Atlantic Oil & Prod. Co.'s No. 1 Jones, 2,310 ft. from N line and 440 ft. from W line of Sec. 36, Blk. 43, Twp. 2s, T.&P. Sur.	Hole bridged after second shot; now cleaning out; flowed 30 bbls. on Jan. 24; T.D. 4,299 ft.
Broderick & Calvert's No. 1 Cowden, 1,980 ft. from S line and 1,980 ft. from W line of Sec. 16, Blk. 43, Twp. 2s, T.&P. Sur.	Drlg. 3,425 ft.
Continental Oil Co.'s No. 1 Holt, 660 ft. from W and 1,980 ft. from S line of Sec. 20, Blk. A, P.S.L. Sur.	Drlg. 3,485 ft.
Gilpen et al's No. 1 Blakeney, 330 ft. from S. 440 ft. from E line of Sec. 32, Blk. 43, Twp. 1n, T.&P. Sur.	200 ft. of sulphur water 4,389-4,405 ft.; T.D. 4,405 ft.

(Continued on Page 42)

COMPLETIONS IN PANHANDLE

Gray County

Hoffman Oil Co.'s No. 2 Finley, pay 2,945-3,020 feet, initial production 210 bbls. after shot, total depth 3,020 feet. Skelly Oil Co.'s No. 3-A Webb, shot 100 quarts from 2,378-2,418 feet, initial production 268 bbls. first 24 hours, total depth 2,575 feet. Champlin Refining Co.'s No. 6 McLaughlin, pay 2,945-3,030 feet and 3,070 feet, initial production 125 bbls. on pump, total depth 3,125 feet. Dixon Creek Oil & Refining Co.'s No. 3 Allam, pay 3,235-75 feet, initial production 175 bbls. after shot, total depth 3,275 feet. Sinclair Prairie Oil Co.'s No. 4 Worley-Reynolds (old well drilled deeper), old total depth 3,068 feet, new total depth 3,261 feet, increase in pay 3,172-75 feet, initial production 20 bbls., total depth 3,261 feet. Texas Co.'s No. 11 Cook-Faulkner, pay 2,815-22 feet, and 2,840-80, 2,870-80 and 2,900-30 feet, initial production 550 bbls., total depth 3,020 feet. F. H. Yealy's No. 2 Crank, shot 120 quarts from 3,200-94 feet, initial production 15 bbls., total depth 3,306 feet.

Wheeler County

Bell Oil & Gas Co.'s No. 1 D'Spain, pay 2,330-57 feet and 2,455-68 feet, initial production 642 bbls., total depth 2,468 feet. Magic Oil & Gas Co.'s No. 2 Koons, pay 2,338-52 feet, initial production 54 bbls. of oil and 15,000,000 feet of gas, total depth 2,362 feet.

COMPLETIONS IN WEST TEXAS

Glasscock County

Humble Oil & Refining Co.'s No. 3 Arrington, top pay 2,166 feet, increase at 2,189 feet, initial production 19 bbls. per day pumping, total depth 2,281 feet. H. O. Wooten's No. 1-C Edwards, top pay 2,160 feet, increase at 2,192 feet, initial production 45 bbls. per hour, total depth 2,202 feet.

Reagan County

G. R. Snider and Shell Petroleum Corp.'s No. 1 Hughes, hole full of sulphur water, dry and abandoned, total depth 3,011 feet.

Ward County

Gulf Production Co.'s No. 23 Hutchins, pay 2,697 feet, initial production 670 bbls. per day flowing, total depth 2,701 feet; No. 24 Hutchins, pay 2,627 feet, initial production 366 bbls. per day flowing, total depth 2,717 feet; No. 30 O'Brien, top pay 2,600 feet, initial production 301 bbls. per day flowing, total depth 2,748 feet.

Fisher County

Mid-Continent Petroleum Corp.'s No. 2 Pardue, show of oil at 3,097-98 feet, initial production 560 bbls. in 12 hours before treating with acid, initial production after acid treatment estimated 1,000 bbls., total depth 3,103 ft.

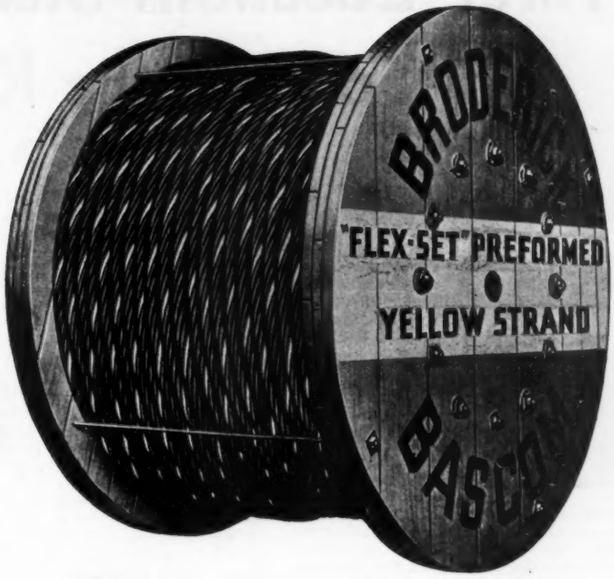
COMPLETIONS IN WICHITA FALLS DISTRICT

Archer County

L. T. Burns' No. 1 W. P. Ferguson, dry and abandoned, total depth 1,790 feet. Fain & McGaha's No. 16 Ferguson, oil sand 1,734-49 feet, initial production 24

(Continued on Page 41)

Quick Wire Line Deliveries by The Continental Supply Co.



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Yellow Strand Rotary Drilling Lines

Three Locations Started in Anderson County; Oil Spray in the Rusk County Gas District

By L. E. BREDBERG

DALLAS, Tex., Jan. 29.—Three more locations were staked in Anderson County during the week, two being in the Long Lake area where the Tide Water Oil Co. and Texas Seaboard Oil Co. have two gassers and one small oil producer. These companies staked the two locations in this area and also staked one on their 17,000-acre block in the Cayuga area in the northwestern part of the county. Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 1 G. W. Burkett is located 8,500 feet due south and 1,400 feet west at right angles from the Magnolia ferry, southeast of the companies' discovery well in Anderson County, but in the bend of the river in Leon County. The other location, the same companies' No. 4 Monnig (Long Lake Plantation) is 1,866 feet due south of the discovery well and in the Simon Sanchez Survey. It is northwest of No. 3 Monnig which recently made 35,000,000 feet of gas through a one-quarter inch choke on tubing with pressure 2,100 pounds on tubing and casing. It made a little distillate but the lines started freezing and it is shut in, soon building up pressure to 2,160 pounds. It will probably be completed for a gas well. It was plugged back from total depth of 5,449 feet to 5,250 feet before testing. The same companies' No. 2 Monnig, 1,816 feet due west of the discovery, is still shut in after plugging back to 5,260 feet and making gas with distillate.

Cayuga Block Test

Champlin & Bass, drilling contractors of Dallas, who are to drill the test on the Cayuga block for these companies, have moved in derrick from the Long Lake area and are preparing to spud in the location which is 1,400 feet from the north and east lines of the S. Snider Survey, on fee lands, in the northwestern part of the county, a short distance east of the Trinity River, and several miles southwest of Cayuga. This block was worked by the same geophysical company that worked out the Long Lake structure in the same county, to the south. Gus Schmidt, district geologist for the Tide Water Oil Co., supervised the work which was carried on by the Geophysical Service, Inc., of Dallas.

Byrd-Frost and others staked location for a wildcat approximately 1½ miles northwest of Slocum on the Slocum or Salmon structure in the southern part of Anderson County. Location is 2,200 feet from the north and 700 feet from east lines of the Joseph Crawford Survey, and on the Mrs. Alice Scott farm. Acreage around the test is held mainly by major oil companies, Gulf Production Co. owns a large block to the north. Pure Oil Co. donated the lease on which the test is to be drilled, and Sun Oil Co. and Gulf Production Co. have an interest in the fest by donation of acreage.

The nearest Woodbine sand test drilled in this area was put down by Humble Oil & Refining Co. on the Southern Pine Lumber Co. lands several years ago. That test, drilled to 5,080 feet, is 3 miles northwest of the new location. It had an elevation of 644 feet, topped the Pecan Gap chalk at minus 3,419 feet, went out of it at 3,755 feet, and topped the Austin chalk at minus 4,415 feet.

Leon County

Shell Petroleum Corp. and others' No. 1 Jones, in the J. F. Summeralls Survey, Leon County, is drilling below 5,700 feet. This test is between the same operators' No. 1 Beggs, gas discovery for the county, and a dry hole on the Phillips farm drilled last year. They are also drilling a test to the northeast on a separate structure, on the Lee farm in the William Cooper Survey, now shut down waiting on cement to set after setting 13⅜-inch casing at 2,557 feet. Total depth is 2,580 feet.

E. L. Smith and others' No. 1 Simpson in the Alfred Penn Survey, a wildcat approximately half way between the Long Lake discovery and the Leon County gas discovery, is drilling at 5,826 feet in chalk, top of the Austin chalk reported logged at 5,660 feet by the driller. With an elevation of 270 feet this puts top of this chalk at minus 5,390 feet, making the test appear possible of making a producer from the Woodbine sand. The Leon County gasser logged top of this chalk at 5,150 feet and the Anderson (Long Lake) discovery logged it at 4,612 feet.

Syam Oil Co. has a derrick on the R. H. Mays farm in the N. H. Carroll Survey, approximately 7 miles northwest of the Cayuga location, Anderson County, and in southeastern Navarro County in an area in which it has drilled two failures. One other dry hole has been drilled in the area.

L. Kean and others have a rig up on the L. M. Boyd farm in the W. Hunt Survey, Fannin County.

Baker and others' No. 1 Dupose in the George Hancock Survey, southeast of Mabank in Henderson County, topped the Austin chalk this week at 2,438 feet and is drilling below 3,469 feet after topping Woodbine sand at 3,386 feet.

East Texas Field

American Liberty Oil Co.'s No. 1 Spence, in the southeast part of the Levi Sparks Survey, on the extreme southeastern part of Rusk County, extended the gas producing area during the week and also contacted a spray of oil from 3,688-3,704 feet. It may prove an oil producer in this, the gas producing area. It made an estimated flow of 15,000,000 feet of gas when brought in. Murray and others' No. 1 Arnold, a short distance to the southwest and in the same survey, is making 600 gallons of gasoline per day, producing through one high and one low pressure separator. The gasoline content in some of these wells is running better than 3 gallons per 1,000 feet.

Completions and locations continue to fall slightly each week although there is still plenty of drilling. There were 51 locations staked this week and 56 completions reported.

Yount Lee Oil Co. may dispose of its 2,800 acres of leases including 202 wells in East Texas, principally surrounding the Gregg County discovery well in the Castleberry Survey, if reports of a deal with Stanolind Oil & Gas Co. are correct. The former company acquired a half interest in the Lathrop discovery well, and full interest in the surrounding leases in March, 1931, from John Farrell and associates who started the test which later extended the East Texas Field 12 miles farther north from the Bateman discovery near Kilgore in Rusk County. Arkansas Fuel Oil Co. owns the other half interest in the Lathrop discovery and 96-acre lease on which it is located.

If Stanolind Oil & Gas Co. purchases this block it will be the largest deal made in the field. The deal may include the Yount Lee Oil Co.'s third interest in the Sun-Yount Lee Pipe Line Co.'s 10-inch trunk line to Sun City on the Gulf Coast. This line would give Stanolind Oil & Gas Co. its first direct outlet from the field. Humble Pipe Line Co. now running oil for the company to Mexia where it is taken over by the Stanolind Pipe Line Co. and moved to the coast through its main line.

Distribution reports show a daily average of 413,580 bbls. moved through major trunk lines during the week ending January 25. Nearly 55,000 bbls. per day went to local refineries, 16 being shut down during the week. Tank car shipments averaged 310 for the week. Total daily average distribution ran 468,875 bbls. and production averaged 395,960 bbls. making a total daily average distribution of 72,915 bbls. over and above reported production.

Gregg County Lease Suit

The State of Texas has brought suit to recover approximately 500 acres of land in Gregg County. The land is adjacent to and between the Francis W. Johnson Survey and the Sabine River, and the attorney general claims the land is unpatented and a part of the unsurveyed public domain of Texas. Approximately 50 wells are located on the land. Those named as defendants are Atlantic Oil Producing Co., Sun Oil Co., Gulf Production Co., Texas Co., Shell Petroleum Corp., Arkansas Fuel Oil Co., Humble Oil & Refining Co. and others. If the attorney general's contention is upheld by the court the land will be subject to lease by the State.

East Central Texas Wildcats

Week Ending January 29

Company, well, farm name, section and block—	Remarks
ANDERSON COUNTY	
Byrd-Frost et al's No. 1 Alice Scott, 2,200 ft. from N and 700 ft. from E lines of Joseph Crawford Sur., 1½ miles NW of Slocum	Rig.
Standard of Kansas' No. 1 A. W. Johnson, 665 ft. from N line, 430 ft. from E and W lines of 32.8-ac. tract, Simon Sanches Sur.	**Derrick.**
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 3 Long Lake Plantation, 1,866 ft. due W of Tide Water and Texas Seaboard Oil Co.'s No. 1 Long Lake, Simon Sanches Sur.	**Tested gas with small spray of oil after being plugged back; now shut in; T.D. 5,352 ft.**
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 3 Long Lake Plantation, 2,732 ft. S of No. 1, 2,799 ft. E at R/A, Simon Sanches Sur. No. 1	**Tested 20,000,000 ft. of gas after being plugged back to 5,250 ft.; T.D. 5,449 ft.**
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 1 fee, 1,400 ft. from N and E lines of survey, Samuel Snider Sur.	Moving in material.
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 1 G. W. Burkett, 8,500 ft. due S and 1,400 ft. from W at right angles from Magnolia Ferry, Simon Sanches Sur. No. A-23	Moving in material.
Tide Water Oil Co.'s No. 4 Monnig, 1,866 ft. due S of No. 1 Simon Sanches Sur.	Moving in material.
BOWIE COUNTY	
R. W. Lynn and W. R. Rolfe's No. 1 Mrs. R. D. Hart, 330 ft. out of NE cor. of Hart 20-ac. tract, 1 mile E of Nash, Thomas Price Sur.	**Location.**
CHEROKEE COUNTY	
A. R. Lewis et al's No. 1 J. Bradford, 1,600 ft. from W line and 200 ft. from N line of 50-ac. tract, J. Laprella Sur.	**Derrick.**
A. F. Richardson's No. 1 P. Wood, 660 ft. from N line, 1,300 ft. from E line of 493-ac. tract, 14 miles E of Jacksonville, on Cherokee-Rusk County line, Ignacia Sanches Sur.	**Derrick.**
FANNIN COUNTY	
L. Kean et al's No. 1 L. M. Boyd, 900 ft. from E line and 200 ft. from N line of survey, W. Hunt Sur.	Rig up.
FRANKLIN COUNTY	
Van Emon et al's No. 1 O. S. Maxton, 910 varas W, 910 varas S of NE cor. of survey, John Brown Sur.	**Derrick.**
FREESTONE COUNTY	
Clyde Creighton's No. 1 Holly Bros., 854 ft. from W and center N and S lines of lease, A.B.&M. Sur.	**T.D. 5,260 ft.**
GREGG COUNTY	
C. H. Lyons et al's No. 1 Cooke, 330 ft. from N line of lease and S offset to Lyons' No. 1, W. R. Stephens Sur.	**Derrick.**
Paul T. Rutledge's No. 1 M. T. Cole, 1,981 ft. S, 372 ft. E of NE cor. of Tide Water's Lacy lease, M. T. Cole Sur.	**Waiting on cmt. to set; T.D. 3,549 ft.**

(Continued on Page 42)

COMPLETIONS IN EAST TEXAS

North Gregg County

Atlantic Oil Producing Co.'s No. 6-B A. Tooke, top sand 3,544 feet, initial production 68 bbls. in one-half hour through open tubing, total depth 3,600 feet. Atlantic and Stanolind Oil & Gas companies' No. 10 Fishburn, top sand 3,489 feet, initial production 102 bbls. per hour through open tubing, total depth 3,625 feet. Bond and Dillard's No. 10 J. C. Barrett, top sand 3,651 feet, initial production 47 bbls. in one-half hour through open tubing, total depth 3,688 feet. Brown, receiver's No. 4 G. W. Ritchey, top sand 3,566 feet, initial production 95 bbls. per hour through open tubing, total depth 3,590 feet. C. & G. Oil Co.'s No. 14 T. B. Harris, top sand 3,518 feet, initial production 75 bbls per hour through open tubing, total depth 3,539 feet. F. H. E. Oil Co.'s No. 5 E. E. Anderson, top sand 3,589 feet, initial production 85 bbls. per hour through open tubing, total depth 3,605 feet.

House & Trigger's No. 1 Reese, top sand 3,582 feet, initial production 70 bbls. per hour through open tubing, total depth 3,625 feet. Magnolia Petroleum Co.'s No. 7 Davis, top sand 3,580 feet, initial production 105 bbls. per hour through open tubing, total depth 3,595 feet; No. 5 T. W. Tuttle, top sand 3,-

584 feet, initial production 21 bbls. in one-quarter hour through open tubing, total depth 3,615 feet. Duluth and East Texas Oil Co.'s No. 2 School Lot, top sand 3,595 feet, initial production 150 bbls. per hour through open tubing, total depth 3,644 feet. Selby Oil & Gas Co.'s No. 1 A. Miller, top sand 3,560 feet, initial production 70 bbls. in one-half hour through open tubing, total depth 3,572 feet. Smith & Dorough's No. 4 C. C. Clemens, top sand 3,638 feet, initial production 92 bbls. per hour through open tubing, total depth 3,683 feet. Stanolind Oil & Gas Co. and Simms Oil Co.'s No. 9 McGeorge, top sand 3,440 feet, initial production 21 bbls. in one-quarter hour through open tubing, total depth 3,505 feet.

South Gregg County

American Liberty Oil Co.'s No. 11 L. P. Griffin, top sand 3,567 feet, initial production 34 bbls. in one-quarter hour through open tubing, total depth 3,590 feet. Harry Elliott's No. 3 H. McNeely, top sand 3,652 feet, initial production 80 bbls. per hour through open tubing, total depth 3,658 feet. Gulf Production Co.'s No. 11 M. T. Cole, top sand 3,535 feet, initial production 92 bbls. per hour through open tubing, total depth 3,546 feet; No. 7 L. D. Crim, top sand 3,605 feet, initial production 77 bbls. per hour through open tubing, total depth 3,620 feet. Humble Oil & Refining Co.'s No. 29-B S. S. Laird, top sand 3,566 feet, initial production 70 bbls. per hour through open tubing, total depth 3,636 feet. E. L. Smith's No. 3 Register, top sand 3,586 feet, initial production 33 bbls. in 25 minutes through open tubing, total depth 3,595 feet. Stodel Oil Co.'s No. 5 D. Smith, top sand 3,597 feet, initial production 80 bbls. per hour through open tubing, total depth 3,609 feet. Texas Co.'s No. 8 Dickson, top sand 3,530 feet, initial production 79 bbls. per hour through open tubing, total depth 3,609 feet; No. 10 R. W. Wells, top sand 3,639 feet, initial production 40 bbls. per hour through open tubing, total depth 3,650 feet.

North Rusk County

Atlantic Oil Producing Co.'s No. 3 George Thomasson, top sand 3,588 feet, initial production 60 bbls. in one-half hour through open tubing, total depth 3,628 feet. Gulf Production Co.'s No. 5 M. R. Terrell, top sand 3,664 feet, initial production 95 bbls. per hour through open tubing, total depth 3,610 feet. W. K. H. Oil Co.'s No. 2 Morris, top sand 3,638 feet, initial production 20 bbls. in 20 minutes through open tubing, total depth 3,640 feet. Humble Oil & Refining Co.'s No. 7 Minor, top sand 3,699 feet, initial production 16½ bbls. through one-half inch tubing choke, total depth 3,735 feet. Lewis Production Co. and others' No. 5 W. B. Wells, top sand 3,647 feet, initial production 85 bbls. per hour through open tubing, total depth 3,654 feet. Snowden & McSweeney's No. 14 Roy Laird, top sand 3,634 feet, initial production 82 bbls. per hour through open tubing, total depth 3,636 feet. Tide Water Oil Co.'s No. 3-C F. L. Buntyn, top sand 3,680 feet, initial production 30 bbls. in one-quarter hour through open tubing, total depth 3,705 feet.

South Rusk County

American Liberty Oil Co.'s No. 3 Joe Lee, top sand 3,772 feet, initial production 30 bbls. in one-quarter hour through open tubing, total depth 3,777 feet. Butler & Calhoun's No. 2 F. J. Cox, top sand 3,605 feet, initial production 30 bbls. in one-half hour through open tubing, total depth 3,679 feet. J. L. Collins' No. 3 Dan Kelly, top sand 3,662 feet, initial production 70 bbls. per hour through open tubing, total depth 3,638 feet. Ebony Oil Co.'s No. 5 Deason, top sand 3,640 feet, initial production 25 bbls. in one-half hour through open tubing, total depth 3,698 feet. Gulf Production Co.'s No. 9 W. L. Murphy, top sand 3,710 feet, initial production 80 bbls. per hour through open tubing, total depth 3,724 feet. Humble Oil & Refining Co.'s No. 3-A Holt, top sand 3,741 feet, initial production 96 bbls. per hour through open tubing, total depth 3,751 feet; No. 17 C. J. Thompson, top sand 3,671 feet, initial production 93 bbls. per hour through open tubing, total depth 3,701 feet; No. 22 John W. Turner, top sand 3,698 feet, initial production 39 bbls. per hour through open tubing, total depth 3,778 feet. Hunt Production Co.'s No. 12-D Bradford, top sand 3,620 feet, initial production 20 bbls. per hour through open tubing, total depth 3,640 feet; No. 17-C Fair, top sand 3,608 feet, initial production 37 bbls. in one-half hour through open tubing, total depth 3,635 feet.

Leith & Bateman's No. 1 W. W. Hammett, top sand 3,665 feet, dry and abandoned, total depth 3,660 feet. McMahon and others' No. 1 Joe Lee, top sand 3,622 feet, initial production 45 bbls. per hour through open tubing, total depth 3,646 feet. J. E. Mabee's No. 9 W. P. Brett, top sand 3,672 feet, initial production 60 bbls. per hour through open tubing, total depth 3,720 feet. Mid-Kansas Oil & Gas Co.'s No. 17 Burton, top sand 3,621 feet, initial production 76 bbls. per hour through open tubing, total depth 3,660 feet; No. 14 Ledbetter, top sand 3,667 feet, initial production 108 bbls. per hour through open tubing, total depth 3,677 feet. Octo Oil Co.'s No. 2 E. B. Alford, top sand 3,601 feet, initial production 75 bbls. in eight hours' swabbing, total depth 3,691 feet. Tide Water Oil Co.'s No. 3 Lum Tolliver, top sand 3,689 feet, initial production 15 bbls. in one-quarter hour through open tubing, total depth 3,720 feet. Ward Oil Co.'s No. 22 E. S. Thrash, top sand 3,734 feet, initial production 78 bbls. in 1 hour and 30 minutes through open tubing, total depth 3,774 feet. R. W. Whisenhunt's No. 4-A G. W. Eaton, top sand 3,762 feet, initial production 75 bbls. per hour through open tubing, total depth 3,778 feet.

Smith County

R. J. McMurray's No. 4 Robinson, top sand 3,799 feet, initial production 120 bbls. per hour through open tubing, total depth 3,800 feet. Mid-Kansas Oil & Gas Co.'s No. 24 J. H. Sharp, top sand 3,675 feet, initial production 44 bbls. per hour through open tubing, total depth 3,676 feet. Sinclair Prairie Oil Co.'s No. 7 Patterson, top sand 3,735 feet, initial production 26 bbls. per hour through open tubing, total depth 3,737 feet.

Upshur County

Magnolia Petroleum Co.'s No. 11 R. A. Adkins, top sand 3,717 feet, initial production 75 bbls. per hour through open tubing, total depth 3,718 feet; No. 10 N. W. Blackwell, top sand 3,663 feet, initial production 84 bbls. per hour through open tubing, total depth 3,667 feet. Manzel and others' No. 1 C. B. Mackey, top sand 3,736 feet, initial production 25 bbls. per hour through open tubing, total depth 3,738 feet. Roeser & Pendleton's No. 4 E. C. Evers, top sand 3,662 feet, initial production 30 bbls. in 24 hours through open tubing, total depth 3,693 feet.

West Texas Fields

(Continued from Page 38)

bbls., total depth 1,749 feet; No. 17 Ferguson, oil sand 649-60 feet, initial production 10 bbls., total depth 660 feet; No. 18 Ferguson, dry and abandoned, total depth 670 feet. Gray Drilling Co.'s No. 2 Ferguson, oil sand 643-48 feet, initial production 90 bbls., total depth 652 feet. C. W. Boller and others' No. 5 Perkins, sandy lime 1,417-27½ feet, initial production 75 bbls., total depth 1,427½ feet, treated with acid; No. 12 Perkins, sandy lime 1,441-52 feet, initial production 125 bbls., total depth 1,452 feet, treated with acid; No. 1 Perkins, dry and abandoned, total depth 1,475 feet. Champion and Outlaw's No. 1 Andrews, dry and abandoned, total depth 1,017 feet. Continental Oil Co.'s No. 3 Falls, sandy lime 1,097-1,117½ feet, initial production 2,062 bbls. in 24 hours, total depth 1,117½ feet, treated with acid; No. 4 Logan, sandy lime 1,121-36 feet, initial production 80 bbls. of oil and 16 bbls. of water, total depth 1,136 feet; No. 5 Logan, sandy lime 1,175-91 feet, initial production 288 bbls. in 24 hours, total depth 1,191 feet, treated with acid. W. R. Cooper and others' No. 4 Hamilton, oil sand 1,099-1,104 feet, initial production 10 bbls., total depth 1,104 feet. F. P. Cullum's No. 10 Falls-Ellis, sandy lime 1,148-66 feet, initial production 300 bbls., total depth 1,166 feet, treated with acid; No. 12 Falls-Ellis, sandy lime 1,155-74 feet, initial production 225 bbls., total depth 1,174 feet, treated with acid. F. H. E. Oil Co.'s No. 5 W. T. Coffield, sandy lime 1,195-1,206 feet, initial production 2 bbls. of oil sand, 15 bbls. of salt water, total depth 1,206 feet, treated with acid. Golding and Cochran's No. 1-B Perkins, dry and abandoned, total depth 1,477 feet.

W. B. Hamilton's No. 19 Abercrombie, sandy lime 1,206 feet, initial production 225 bbls., total depth 1,206 feet, treated with acid; No. 26 Abercrombie, sandy lime 1,144-59 feet, initial production 129 bbls., total depth 1,159 feet, treated with acid; No. 4 Coffield, sandy lime 1,200-04½ feet, initial production 123 bbls., total depth 1,204½ feet, treated with acid; No. 7 Coffield, lime 1,179½-82½ feet, initial production 200 bbls., total depth 1,182½ feet, treated with acid; No. 9 Pace, lime 1,155-69 feet, initial production 150 bbls. in 12 hours, total depth 1,169 feet, treated with acid. Humble Oil & Refining Co.'s No. 6 Hamilton, gas sand 1,109-1,111 feet, oil sand 1,111-12½ feet, initial production 52 bbls., total depth 1,112½ feet. King Royalty Co.'s No. 3 Andrews, dry and abandoned, total depth 957 feet. McDaniel and others' No. 4 Benson, oil sand 925-37 feet, initial production 288 bbls., total depth 937 feet. Minnick's No. 1 Ben W. Garvey, dry and abandoned, total depth 1,072 feet.

George L. Pace's No. 7 Arnold, sandy lime 1,164-72½ feet, initial production 80 bbls., total depth 1,172½ feet, treated with acid. R. C. Parker's No. 1 Blewett, dry and abandoned, total depth 1,443 feet. Perkins and Cullum's No. 6 Falls-Boyles, sandy lime 1,151-68 feet, initial production 200 bbls., total depth 1,168 feet; No. 7 Falls-Boyles, sandy lime 1,153-69 feet, initial production 225 bbls., total depth 1,169 feet, treated with acid; No. 8 Falls-Boyles, sandy lime 1,147-65 feet, initial production 300 bbls., total depth 1,165 feet, treated with acid; No. 9 Falls-Boyles, sandy lime 1,154-72 feet, initial production 250 bbls., total depth 1,172 feet, treated with acid; No. 7 Falls Hamyen, sandy lime 1,096-1,112 feet, initial production 1,836 bbls. in 24 hours, total depth 1,113 feet, treated with acid; No. 13 Falls-Tikten, sandy lime 1,138-53 feet, initial production 70 bbls., total depth 1,153 feet, treated with acid. Simms Oil Co.'s No. 2 Perkins, sandy lime 1,450-57 feet, initial production 500 bbls., total depth 1,457 feet, treated with acid. Jack Spratt's No. 1 Farmer, dry and abandoned, total depth 1,295 feet. Texas Co.'s No. 2 Andrews, oil sand 934-41 feet, initial production 90 bbls., total depth 941 feet.

Clay County

Wheeler and Brashear's No. 1 Hansard, dry and abandoned, total depth 1,603 feet.

Montague County

Arco Oil Co.'s No. 4 Cunningham, oil sand 896-900 feet, and 921-33 feet, initial production 14 bbls., total depth 933 feet; No. 5 Cunningham, oil sand 908-23 feet, initial production 9 bbls., total depth 923 feet. Egger Achning and others' No. 1 Glass, dry and abandoned, total depth 2,015 feet. Russell and Monroe's No. 1 Flannery, dry and abandoned, No. 1 Browning, dry and abandoned, total depth 2,001 feet. Scott and Grant's total depth 1,750 feet. Texas Co.'s No. 1 W. W. Jones, dry and abandoned, total depth 1,846 feet; No. 1 F. M. O'Neal, oil sand 1,730-39 feet, initial production 141 bbls., total depth 1,739 feet.

Wichita County

Bolin Lindsey Maer's No. 1 Roberts, dry and abandoned, total depth 1,615 feet. Bail Hester's No. 1 M. A. Love, temporarily abandoned, total depth 1,833 feet. Mogren & Anderson's No. 33 Goetze, oil sand 401-08 feet, 490-96 feet and 626-38 feet, initial production 10 bbls., total depth 922 feet, plugged back to 820 feet. Petroleum Producers Co.'s No. 1 Allen & Kemp, oil sand 674-78 feet, initial production 1½ bbls., total depth 678 feet. A. D. Wolf's No. 2 Daume, oil sand 744-53 feet, initial production 10 bbls., total depth 755 feet.

Throckmorton County

A. S. Michael's No. 1 D. M. McKeechan, gas sand 724-29 feet, initial production 14 bbls., total depth 732 feet.

Wilbarger County

Allen-Walker's No. 1 N. R. Heath, dry and abandoned, total depth 1,942 feet. Waggoner Refining Co.'s No. 3 Waggoner, dry and abandoned, total depth 2,000 feet.

Young County

J. B. Baker, Jr.'s No. 1 Perkins, oil sand 735-48 feet, initial production 15 bbls., total depth 748 feet. Belknap Oil Co.'s No. 3 Belknap, oil sand 687-94 feet, initial production 100 bbls., total depth 694 feet; No. 4 Belknap, oil sand 697-802 feet, initial production 125 bbls., total depth 802 feet. Brek Oil Co.'s No. 2 Newman, oil sand 538-50 feet, initial production 30 bbls., total depth 550 feet. Corvette Oil Corp.'s No. 1 McClatchey, dry and abandoned, total depth 1,120 feet. Densmore & Stipe's No. 1 Neeley, dry and abandoned, total depth 1,175 feet. F. H. E. Oil Co.'s No. 2-A Stewart, oil sand 508-18 feet, initial production 5 bbls., total depth 518 feet. G. C. Gilmore's No. 1 Logan, dry and abandoned, total depth 604 feet. Iron Mountain Oil Co.'s No. 7 Y. Swain, oil sand 703-11 feet, initial production 15 bbls., total depth 711 feet.

Charles Kleiner and others' No. 4 Belknap, oil sand 688-92 feet, initial production 165 bbls., total depth 692 feet; No. 5 Belknap, oil sand 692-97 feet, initial production 150 bbls., total depth 697 feet. Maer & Hamilton's No. 9 Jeffery, oil sand 829-40 feet, initial production 110 bbls., total depth 840 feet. W. N. Nichols' No. 1 Routon, dry and abandoned, total depth 753 feet. Petroleum Producers Co.'s No. 2 Burris, oil sand 692-707 feet, initial production 25 bbls., total depth 701 feet. D. L. Wolf's No. 1 Cox, dry and abandoned, total depth 562 feet; No. 1 Ellis, dry and abandoned, total depth 604 feet. Wooten & Reed's No. 1 Kelpatrick, dry and abandoned, total depth 772 feet. Charles Knox' No. 3 Manning, oil sand 2,720-36 feet, initial production 210 bbls. flowing, total depth 2,736 feet. Nash & Windfohr's No. 5 Graham-Vick, dry and abandoned, total depth 3,673 feet. Sinclair Prairie Oil Co.'s No. 6 Moran, oil sand 2,497-2,533 feet, initial production 692 bbls. flowing first 24 hours, total depth 2,533 feet.

COMPLETIONS IN RANGER

Brown County

Charter Oil Co.'s No. 1-B Reeves, show oil 1,274-78 feet, initial production 168 bbls., total depth 1,278 feet. R. C. McCarter's No. 1-A Dunsman, gas sand 1,140-47 feet, oil sand 1,152-63½ feet, initial production 25 bbls. of oil and 50,000 feet of gas, total depth 1,163½ feet. S. B. Owens' No. 11 R. Lynch, dry and abandoned, total depth 1,285 feet.

Callahan County

A. L. Spencer's No. 1 Finley, gas sand 340-50 feet, initial production 1,200,000 feet of gas, total depth 595 feet. No. 2 Finley, gas sand 319-29 feet, initial production 500,000 feet of gas, total depth 329 feet.

Shackelford County

D. W. Mackey's No. 12-B T. W. Lee, shot 20 quarts 794-811 feet, initial production 30 bbls., total depth 815 feet. A. C. Walker's No. 2 B. S. Walker, show of oil 402-07 feet, initial production 6 bbls., total depth 407 feet.

East Central Texas Wildcats

(Continued from Page 40)

Max Rubin's No. 1 Sam Burton, 330 ft. out of NW cor. of 100-ac. lease, D. Sanches Sur. ..... Building derrick.

Teton Oil Co.'s No. 1 E. Stell et al, 330 ft. from N line, 50 ft. from W line of 119.92-ac. tract, John Wilkerson Sur. ..... Rigging up to pump; T.D. 3,552 ft.

HENDERSON COUNTY

Roy Black et al's No. 1 C. B. Meredith, 360 ft. from N and W lines of 64.5-ac. tract, 4 miles SE of Malakoff, Wiley Kay Sur. ..... Location.

Campbell and Champlin's No. 1 R. S. Ansley, 198 varas S, 623 varas W of NE cor. of lease, 6 miles SE of Buffalo, N. H. Thompson Sur. ..... Derrick.

HUNT COUNTY

Meade and McKennie's No. 1 Love, 300 ft. from N line, 4,300 ft. from W line of 95-ac. tract, John Gillaky Sur. ..... Rig up.

LAMAR COUNTY

Cole et al's (formerly Optometrist Oil Club) No. 1 J. M. McFaddin, 450 ft. from S and W lines of E 25-ac. tract, 10 miles NW of Paris, Joseph Dick Sur. ..... Old well to be drilled deeper; T.D. 2,506 ft.

LEON COUNTY

Cooper et al's No. 1 W. H. Cozart, 1,000 ft. from SE cor. of 266-ac. tract in SW part of county, Thomas Gardner Sur. ..... Rig up and S.D.

Gholson Drilling Co.'s No. 1 Alliance Trust Co., 330 ft. S and E of Humble's Alliance Trust Co. 3,000-ac. tract, Simon Sanches Sur. No. 9 ..... Location.

Shell Petroleum Corp.'s No. 1 J. N. Jones, 800 ft. from N line of survey and 1,000 ft. from E line of survey, J. F. Summeralls Sur. ..... Fishing 5,531 ft.

Shell Petroleum Corp.'s No. 1 Lee, 1,500 ft. from NW and SW line of farm and survey, William Cooper Sur. ..... Reaming to set csg.; T.D. 2,580 ft.

E. L. Smith's No. 1 W. P. Simpson, 1,320 ft. from S and E lines of survey, Alfred Penn Sur. No. 693 ... Drlg. 5,627 ft.

Standard Oil Co. of Kansas' No. 1 A. W. Johnson, 466 ft. from NE line, 466 ft. from NW line of 100-ac. tract, Simon Sanches Sur. No. 7 ..... Location.

LIMESTONE COUNTY

J. Rodgers et al's No. 1 Vol DeLone, 1,516 ft. from W line and 600 ft. from N line of W 100-ac. tract, Pedro Varela Sur. ..... Derrick.

NAVARRO COUNTY

Syam Oil Co.'s No. 1 R. H. Mays, 300 ft. from S and E lines of 206.47-ac. tract, N. H. Carroll Sur. ..... Derrick.

RAINES COUNTY

J. W. Hallsell et al's No. 1 P. F. Jones, 400 ft. out of SW cor. of 22-ac. tract, 2½ miles S of Alba, H.B. B.&C. Sur. ..... Derrick.

RUSK COUNTY

Perry et al's No. 1 Brown and Chisum, 150 ft. E and 2,650 ft. N of SW cor. of survey, L. M. Sparks Sur. ... Drlg. 2,240 ft.

Sanders et al's No. 1 M. Lee, 2,300 ft. from N line and 1,975 ft. from E line of survey, J. H. Sparks Sur. .... Drlg. 2,730 ft.

UPSHUR COUNTY

B. F. Phillips et al's No. 1 D. A. Fleet, SE cor. of B. Holloway Sur., Charles Cooper Sur. ..... Derrick.

VAN ZANDT COUNTY

Gillum and Allen et al's No. 1 A. T. Bass, 450 ft. from W line and 150 ft. from N line of 10-ac. tract, William Hart Sur. ..... Location.

Griffith Bros.' No. 1 Bruce, 1,000 ft. from S line and 330 ft. from E line of 124-ac. tract, G. Martinez Sur. ..... Drlg. 1,562 ft.

Humble O. & R. Co.'s No. 1 S. R. Ray, 200 ft. S, 160 ft. W of J. D. Listenbee 80-ac. lease in Nacogdoches County School Lands Sur. ..... Waiting on pumping equipment; T.D. 1,237 ft.

Pure Oil Co.'s No. 9 W. F. Swain, 300 ft. S of N line and 450 ft. E of W line of W. F. Swain 40-ac. tract, John Walling Sur. ..... Cmt. setting 312 ft.

Pure Oil Co.'s No. 2 Ray, 250 ft. N of S line and 182 ft. W of E line of tract, Nacogdoches County School Land Sur., elevation 443.7 ft. ..... Location.

Ray Drlg. Co.'s No. 1 J. W. Mallory, 1,150 ft. from S line, 150 ft. from W line of 317-ac. tract, John Walling Sur. ..... Derrick.

Tom Sharp et al's No. 1-A M. L. Cox, 1,875 ft. from SE line and 1,800 ft. from SW line of 300-ac. tract, O. C. Nugent Sur. ..... S.D. 1,250 ft.

WOOD COUNTY

D. T. Cauble and Thompson's No. 1 N. G. Bobett, 650 ft. from S line and 330 ft. from W line of tract, 2½ miles NW of Mineola, Daniel Fuller Sur. ..... Fishing 4,636 ft.

Wildcat Operations in West Texas

(Continued from Page 38)

Harrison et al's No. 3 Addis, 990 ft. from N line and 2,200 ft. from W line of Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur. ..... Fishing; T.D. 3,836 ft.

Harrison et al's No. 3 Addis, 1,650 ft. from N line and 2,200 ft. from W line of Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur. ..... Location.

Humble Oil & Ref. Co.'s No. 1 Thomas J. Martin, 330 ft. from N and 440 ft. from E line of Sec. 28, Blk. 43, T.&P. Sur. ..... Prepare to run csg.; T.D. 3,670 ft.

Landreth Prod. Co.'s No. 2 O. B. Holt, 660 ft. from S and E lines of Sec. 15, Blk. 43, Twp. 1n, T.&P.R.R. Sur. ..... Moving in material.

Landreth Prod. Co. and Llano Oil Co.'s No. 2 O. B. Holt, 1,980 ft. from W and 1,980 ft. from N, Sec. 20, Blk. A, P.S.L. Sur. ..... Digging pits.

Stanolind Oil & Gas Co.'s No. 3 E. F. Cowden, 2,275½ ft. E and 330 ft. from S line, Sec. 26, Blk. 43, Twp. 2s, T.&P.R.R. Sur. ..... Cellar.

Stanolind Oil & Gas Co.'s No. 4 J. M. Cowden, 660 ft. from N and 1,980 ft. from E line of Sec. 37, Blk. 42, Twp. 1n, T.&P. Sur. ..... Spudding.

Stanolind Oil & Gas Co.'s No. 5 J. M. Cowden, 660 ft. from N and 1,980 ft. from E line of Sec. 34, Blk. 43, Twp. 1n, T.&P. Sur. ..... Moving in material.

Fred Turner's No. 2-A Addis, 2,310 ft. from N and 440 ft. from E of Sec. 35, Blk. 43, Twp. 2s, T.&P Sur. ... Completed water well.

FISHER COUNTY

Cranfill & Reynolds' No. 3 J. H. Young, 330 ft. W and 330 ft. S of NE cor. of survey, Sec. 208, B.B.B.&C. Sur. ..... Cleaning out 1,825 ft.

Sinclair Prairie Oil Co.'s No. 3 Frank Steele, 990 ft. from N and 330 ft. from E line of Sec. 72, Blk. 1, H.&T.C. Sur. ..... Rig up.

Stanolind Oil & Gas Co.'s No. 3 F. Steele, 660 ft. from S and 2,310 ft. from W line of Sec. 210, Blk. 1, B.B.B.&C. Sur. ..... Crooked hole filled up and started redrilling; T.D. 850 ft.

Merry Bros. and Perini's No. 1 J. J. Steele, 330 ft. E and 150 ft. N of SW cor. NE Sec. 216, B.B.B.&C. R.R. Sur. ..... Flowed 125 bbls. in 2 hrs. and stopped; will run tubing and packer; T.D. 2,932 ft.

E. L. Smith Oil Co.'s No. 1 fee, 450 ft. from S and 330 ft. from E, Sec. 203, Blk. 1, B.B.B.&C. Sur. ..... Drlg. 760 ft.

Southern's No. 1 King, 660 ft. from N and 330 ft. from W line of SW Sec. 194, B.B.B.&C. Sur. ..... Drlg. 1,240 ft.

Texas Inland Oil & Gas Co.'s No. 1 First National Bank of Hamlin, 1,980 ft. from N and 990 ft. from W, Sec. 191, Blk. 1, B.B.B.&C. Sur. ..... Drlg. 2,640 ft.

Texas Co.'s No. 4 T. A. Jean, 990 ft. from N and E lines of Sec. 201, Blk. 1, B.B.B.&C. Sur. ..... Set 12½-in. csg. at 416 ft.

GAINES COUNTY

R. H. Gill et al's No. 1 Crews, 1,320 ft. from S and 1,320 ft. from W line of Sec. 9, Blk. A-20, P.S.L. Sur... Drlg. 3,416 ft.

GLASSCOCK COUNTY

Continental Oil Co.'s No. 1 Gilbreath, 330 ft. from N line and 1,950 ft. from E line of Sec. 34, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... T.D. 2,530 ft.; 1,500 ft. of water in 6 hrs.; plugged back to 2,511 ft.

Empire Gas & Fuel Oil Co.'s No. 2 Hall, 330 ft. from N and W lines of Sec. 21, Blk. 33, Twp. 2s, T.&P. Sur. ..... Drlg. 990 ft.

Humble Oil & Ref. Co.'s No. 2 Washer, 330 ft. from N and 1,650 ft. from E line of Sec. 20, Blk. 33, Twp. 2s, T.&P. Sur. ..... Waiting on cement to set; T.D. 2,080 ft.

Humble Oil & Ref. Co.'s No. 4 Arrington, 330 ft. from N line and 990 ft. from W line, Sec. 22, Blk. 33, Twp. 2s, T.&P. Sur. ..... T.D. 2,280 ft.; 1,300 ft. of oil in hole.

Shell Pet. Corp.'s No. 3-A Kloh, 660 ft. from E and 330 ft. from S line, Sec. 13, Blk. 33, Twp. 2s, T.&P. Sur... Moving in rotary.

Simms Oil Co.'s No. 4-A Coffee, 1,357 ft. from W and 1,370 ft. from S, Sec. 15, Blk. 33, Twp. 2s ..... Waiting on cmt. to set; T.D. 2,125 ft.

HOWARD COUNTY

L. C. Harrison et al's No. 2 Texas Land & Mortgage Co., 2,310 ft. from E line and 330 ft. from the S line of Sec. 4, T.&P.R.R. Sur., Blk. 30, Twp. 1s ..... Location

Humble Oil & Ref. Co.'s No. 2 Settles, 990 ft. from W and 330 ft. from S, Sec. 132, Blk. 29, W.&N.W. Sur. ... Cellar.

Merrick & Lamb's No. 10 Chalk, 1,650 ft. from W and 2,310 ft. from N, Sec. 125, Blk. 29, W.&N.W. Sur. .... Drlg. 290 ft.

Pure Oil Co.'s No. 14 Chalk, 1,650 ft. from N and 2,310 ft. from E, Sec. 135, Blk. 29, W.&N.W. Sur. ..... Bldg. rig.

Joe Rusk et al's No. 2 G. M. Dodge Estate, 330 ft. from N line and 2,310 ft. from the E line of Sec. 9, H.&T.C.R.R. Sur., Blk. 30, Twp. 2s ..... Drlg. 2,285 ft.

Schermerhorn Oil Co.'s No. 8 Kloh, 1,650 ft. from S and 330 ft. from W, Sec. 13, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Drlg. 970 ft.

Sinclair Prairie Oil Co.'s No. 1 Perry Jones, 2,310 ft. from W and 330 ft. from N, Sec. 9, Blk. 30, Twp. 1s, T.&P.R.R. Sur. ..... Bldg. rig.

Sinclair Prairie Oil Co.'s No. 10 Dodge, 2,310 ft. from S and 330 ft. from E, Sec. 1, Blk. 30, Twp. 1s, T.&P. R.R. Sur. ..... Drlg. 560 ft.

Southern Oil Co.'s No. 1 Denman, 2,310 ft. from N line and 330 ft. from W line of Sec. 10, Blk. 30, Twp. 1s, T.&P.R.R. Sur. ..... S.D. 1,965 ft.

Sun Oil Co.'s (No. 6 Phillips, 1,650 ft. from S and 330 ft. from E, Sec. 14, Blk. 33, Twp. 2s, T.&P.R.R. ..... Rig.

Ungren & Frasier's No. 1 Davis, 330 ft. from S line and 990 ft. from W line of Sec. 2, Blk. 30, Twp. 1s, T.&P. Sur. ..... Flowing est. 70 bbls. per day; T.D. 2,804 ft.

IRION COUNTY

S. E. Colgin's No. 1 Tankersley, 200 ft. S and 483 ft. W of the NE cor. of H. F. Ottmer Sur. No. 720 ..... Drlg. 1,310 ft.

Williams-Short's No. 1 Gentry, 2,300 ft. from N line and 2,080 ft. from W line of Sec. 1, Blk. 3, H.&T.C. Sur... S.D. 835 ft.

JONES COUNTY

Clay & Lancaster's No. 2 Brewer, 700 ft. S and 150 ft. E of NW cor. of J. W. Martin Sur. ..... Rig up.

Jack Roberts' No. 2 Swann, 1,200 ft. from N and 1,600 ft. W of SE cor. of I. Miley Sur. ..... Drlg. 2,465 ft.

LOVING COUNTY

R. L. Allen's No. 1 fee, 4,290 ft. from NE line, 330 ft. from SE line, Sec. 33, H.&T.C. Sur. ..... Location

R. L. Allen's No. 2 fee, 4,290 ft. from NE line, 990 ft. from SE line, Sec. 33, Blk. 33, H.&T.C. Sur. .... Location.

R. L. Allen's No. 3 fee, 4,290 ft. from NE line, 990 ft. from NW line, Sec. 33, Blk. 33, H.&T.C. Sur. .... Location.

R. L. Allen's No. 4 fee, 4,290 ft. from NE line, 330 ft. from NW line, Sec. 33, Blk. 33, H.&T.C. Sur. ..... Location.

Eppenauer Drlg. Co.'s No. 1-A Victor, 330 ft. from SW and 330 ft. from SE of NW of N half Sec. 4, Blk. 2, W.&N.W. Sur. ..... Rigged up.

Eppenauer Drlg. Co.'s No. 2-A Allen, 330 ft. from SE and 1,650 ft. from SW, Sec. 4, Blk. 2, W.&N.W. Sur... Rig up.

Sinclair Prairie Oil Co.'s No. 1 Allen, 330 ft. from SE lines and 990 ft. from SW lines of Sec. 4, Blk. 2, W.&N.W. Sur. ..... Drlg. 4,000 ft.

Sinclair Prairie Oil Co.'s No. 2 Bell, 410 ft. from SE and 1,925 ft. from NE of Sec. 91, Blk. 1, W.&N.W. Sur. ..... S.D. 450 ft.

Texas Pacific Coal & Oil Co.'s No. 1 Carmine, C of SE of SW of Sec. 40, Blk. 54, Twp. 1, T.&P. Sur. ..... Underreaming 525 ft.

PECOS COUNTY

California Oil Co.'s No. 1 Reid, 1,087 ft. S and 498 ft. W from the NW cor. of Sec. 61, Blk. 1, I.&G.N. Sur. ..... Drlg. 1,245 ft.

California Oil Co.'s No. 22 Yates, 215 ft. W of No. 1 Reid, Sec. 34, Blk. 194, G.C.&S.F. Sur. ..... Drlg. 947 ft.

Cardinal Oil Co.'s No. 17-E Tippett, 150 ft. from E line of W half and 730 ft. from N of No. 5-E, Sec. 40, Blk. 194, G.C.&S.F. Sur. ..... Waiting on cmt. to set; T.D. 481 ft.

Culberson Bros.'s No. 15-B Monroe, 725 ft. from N line and 1,320 ft. from E line of Sec. 39, Blk. 194, G.C.&S.F.R.R. Sur. ..... Location.

Humble Oil & Refining Co.'s No. 1 White, Baker, 1,320 ft. from N and E lines of Sec. 44, Blk. Z, T.C. Sur... Drlg. 7,647 ft.

Mid-Kansas Oil & Gas Co.'s No. 10 Smith, 150 ft. from N line and 350 ft. from E line of Sec. 31, Blk. 194, G.C.&S.F. Sur. ..... T.D. 1,315 ft.; flowed 75 bbls. in one-half hour from 1,264-65 ft.

Mid-Kansas O. & G. Co.'s No. 18 Smith-Taylor, 1,296 ft. from S line, 1,320 ft. from W line, Sec. 33, G. C.&S.F. Sur., Blk. 194 ..... Location.

Mid-Kansas Oil & Gas Co.'s No. 24 Smith-Taylor, 250 ft. W of S half of Turner Tract No. 1, Sec. 33, Blk. 194, G.C.&S.F. Sur. ..... Road.

Mid-Kansas Oil & Gas Co.'s No. 3 Fred Turner, Jr., 363 ft. from N and 55 ft. E of N half of Tract No. 1, Fred Turner Sur. ..... Cellar.

Mid-Kansas Oil & Gas Co.'s No. 25 Smith-Taylor, 344 ft. W of SE cor. of S half of Turner Tract No. 1, Sec. 33 ..... Fishing 725 ft.

Mid-Kansas Oil & Gas Co.'s No. 26 Smith-Taylor, 395 ft. S and 344 ft. E of SE cor. of S half of Tract No. 1 ..... Cellar.

Mid-Kansas Oil & Gas Co.'s No. 1 Turner, 1,313 ft. from N line and 250 ft. from W line of Turner Sur. No. 2.. Drlg. 1,595 ft.

Mid-Kansas Oil & Gas Co.'s No. 1 Turner, 250 ft. from N line and 250 ft. from W line of Turner Sur. No. 3.. Drlg. 565 ft.

Mid-Kansas Oil & Gas Co.'s No. 2 Turner, 739 ft. from N and 309 ft. from W line of Turner Sur. No. 4 .... Drlg. 1,225 ft.

Mid-Kansas Oil & Gas Co.'s No. 3 Fred Turner, 535 ft. from S line and 500 ft. from W line of Tract No. 2.. Road.

Mid-Kansas Oil & Gas Co.'s No. 8 Fred Turner, 304 ft. S and 55 ft. W of the most northerly NW cor. of I. G. Yates Sur. A-5,196, but in Fred Turner, Jr., Survey, Tract No. 1 ..... Cellar.

Mid-Kansas Oil & Gas Co.'s No. 6 Fred Turner, 350 ft. from W line and 625 ft. from S line of Tract No. 1.. Fishing 1,400 ft.
Mid-Kansas Oil & Gas Co.'s No. 13-H Yates, 408 ft. S of N line of Sec. 33 and 344 ft. W of SE cor. of S half of Tract No. 1 .... Location.
Mid-Kansas Oil & Gas Co.'s No. 13-H Yates, 408 ft. S of N line of Sec. 33 and 344 ft. E of SE cor. of S half of Tract No. 1 .... Location.
Mid-Kansas Oil & Gas Co.'s No. 36-A Yates, 350 ft. N and 324 ft. W from the NW cor. of Turner Tract No. 3 in Sec. 34½, I.G. Yates Sur. .... Waiting on cmt. to set; T.D. 620 ft.
Mid-Kansas Oil & Gas Co.'s No. 37-A Yates, 350 ft. N and 321 ft. E of NW cor. of the Turner Tract No. 3 in Sec. 34½, I. G. Yates Sur. .... Tested 4½ bailers of water in 10 hrs.; T.D. 1,702 ft.
Mid-Kansas Oil & Gas Co.'s No. 38-A Yates, 350 ft. E and 305 ft. S from the NE cor. of Turner Tract No. 3 in Sec. 34½, I. G. Yates Sur. .... Location.
Mid-Kansas Oil & Gas Co.'s No. 39-A Yates, 150 ft. N and 250 ft. W of the NW cor. of Turner Tract No. 4 in Sec. 34½, I. G. Yates Sur. .... Cellar.
Mid-Kansas Oil & Gas Co.'s No. 40-A Yates, 344 ft. from E line and 395 ft. from N of SE cor. of S half of Turner Tract No. 1 .... Drlg. 670 ft.
Mid-Kansas Oil & Gas Co.'s No. 42-A Yates, 56 ft. E and 204 ft. S of the extreme NE cor. of lease, Sec. 34½, Blk. 194, G.C.&S.F. Sur. .... Running csg.; T.D. 1,112 ft.
Mid-Kansas Oil & Gas Co.'s No. 41 I. G. Yates, 480 ft. W and 204 ft. S of the most northerly NE cor. of I. G. Yates Sur. A-8,195 .... Rigging up lubricator; T.D. 1,229 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 14-C University, 725 ft. from S line and 2,730 ft. from E line of Sec. 25, Blk. 9, University Land Sur. .... Drlg. 8,023 ft.
Big Lake Oil Co.'s No. 15-C University, 660 ft. from E line and 660 ft. from S line of Sec. 25, Blk. 9, University Land Sur. .... Cellar.
Group Oil Co.'s No. 16-B University, 1,980 ft. from N and 1,805 ft. from E line, Sec. 36, Blk. 9 .... Cellar.
E. P. Kirschner and White's No. 1 W. A. White and McIntosh, 720 ft. from E and 300 ft. from N of Sec. 1,223, E.L.R.R. Sur. .... Drlg. 90 ft.

RUNNELS COUNTY

Agnew & Sons' No. 2 Fowler, 1,165 ft. from S and 150 ft. from W of NE cor. of Blk. 33, N. Travis Sur.... Drlg. 175 ft.
Anderson et al's No. 1 W. F. James, 330 ft. from N and W lines of Subdiv. No. 20, Norvell Travis Sur. .... Spudded and S.D.
Golden Pet. Corp.'s No. 3 McMillan, 780 ft. from W and 330 ft. from N of Subdiv. No. 22, N. Travis Sur. No. 533 .... Location.
W. S. Sawyer et al's No. 1 Giesecke, 1,211 ft. from N and 4,606 ft. from E lines of survey, Blk. 131, James Hughes Sur. .... Prepare to spud.
Sinclair Prairie Oil Co.'s No. 1 T. B. Wade, 2,597 ft. from N and 2,140 ft. from E line of Subdiv. No. 10, Norvel Travis Sur. .... Drlg. 875 ft.
Wahlenmaier Pet. Co.'s No. 1 T. C. Hall, 330 ft. out of SW cor. E.T.R.R. Sur. No. 149 .... Cleaning out 2,015 ft.
F. D. Williams' No. 1 J. L. Elkins, 2,325 ft. from E and 1,300 ft. N of SW cor. of Blk. 12, but in Blk. 13, N. Travis Sur. No. 538 .... Rig up and S.D.

UPTON COUNTY

Gulf Prod. Co.'s No. 103 McElroy, 1,980 ft. from S and 660 ft. from W. Sec. 197, Blk. F, C.C.S.D.&R.G.N.G... Coring 8,869 ft.
Texas Pacific Coal & Oil Co.'s No. 1-C J. H. Sherk, 1,650 ft. from S and 330 ft. from W, Sec. 1, Blk. 3-B, M.K.&T. Sur. .... Location.
Williams & Williams Drlg. Co.'s No. 1 Robbins, 1,600 ft. from S and 1,900 ft. from E, Sec. 4, G.C.&S.F. Sur. .. Spudded and S.D. to rig up standard tools.

VAL VERDE COUNTY

South-Western Exploration Co.'s No. 1 E. K. Fawcett, 2,310 ft. from S and 2,310 ft. from E, Sec. 14, Blk. L, G.C.&S.F. Sur. .... Moving in material.

WARD COUNTY

Atlantic Oil & Prod. Co.'s No. 10 Johnson, 990 ft. from NE line and 330 ft. from NW line of Sec. 9, Blk. 34, H.&T.C. Sur. .... Rig up rotary.
Atlantic Oil & Prod. Co.'s No. 12 Johnson, 990 ft. from SE line and 990 ft. from NE line of Sec. 9, Blk. 34, H.&T.C. Sur. .... Prepare to deepen; T.D. 2,355 ft.
Atlantic Oil & Prod. Co.'s No. 13 Johnson, 330 ft. from NE line and 330 ft. from SE line of Sec. 9, Blk. 34, H.&T.C. Sur. .... Cellar.
Atlantic Oil & Prod. Co.'s No. 15 Johnson, 330 ft. from SE line and 1,650 ft. from NE line of Sec. 9, Blk. 34, H.&T.C. Sur. .... Location.
California Oil Co.'s No. 3 York, 1,650 ft. from NW and 330 ft. from SW, Sec. 10, Blk. 34, H.&T.C. Sur. .... Drlg. 2,153 ft.
California Oil Co.'s No. 5 York, 1,650 ft. from S and 990 ft. from SW, Sec. 10, Blk. 34, H.&T.C. Sur. .... Location.
S. Caprito et al's No. 2 Pure-Bennett, 990 ft. from SE and 330 ft. from NE lines of Sec. 16, Blk. 34, H.&T.C. Sur. .... Spudding.
Eastland Oil Co.'s No. 3 Johnson, 1,980 ft. from SE line and 1,980 ft. from SW line of Sec. 34, Blk. 34, H.&T.C. Sur. .... Flowing 60 bbls. daily; T.D. 2,554 ft.
Gulf Prod. Co.'s No. 40 O'Brien, 1,650 ft. from N line and 330 ft. from E line of Sec. 17, Blk. F, G.&M.M. B.&A. Sur. .... Cmtd. csg.; T.D. 2,559 ft.
Gulf Prod. Co.'s No. 41 O'Brien, 1,650 ft. from N and 990 ft. from E lines of Sec. 17, Blk. F, G.M.M.B.&A. Sur. .... Drlg. 630 ft.
Gulf Prod. Co.'s No. 42 O'Brien, 2,310 ft. from N and 330 ft. from S, Sec. 17, Blk. F, G.M.M.B.&A. Sur. .... Moving in.
Humble Oil & Ref. Co.'s No. 1 University, 990 ft. from N line and 440 ft. from E line of Sec. 2, Blk. 16, University Sur. .... Pulling tubing; T.D. 2,731 ft.
Jack Leidecker's No. 2 Archenhold, 2,310 ft. from NE and 2,310 ft. from SE, Sec. 23, Blk. 5, H.&T.C. Sur... Rig up.
Simms Oil Co.'s No. 1 W. D. Johnson, 330 ft. from the NE and SE lines of Sec. 28, H.&T.C. Sur., Blk. 34.... Waiting on cmt. to set; T.D. 465 ft.
Sinclair Prairie Oil Co.'s No. 4 Archenhold, 2,310 ft. from NW line and 2,310 ft. from SW line of Sec. 23, Blk. 5, H.&T.C. Sur. .... Drlg. 2,972 ft.
W. B. Smith's No. 1 Wallis, 3,636 ft. from NE line and 167 ft. from SE line of Sec. 19, Blk. 34, H.&T.C. Sur... Location.
Sturm-Simms Oil Co.'s No. 1 Jones, 2,310 ft. from NE and 330 ft. from SE, Sec. 35, Blk. B-39, P.S.L. Sur. .. T.D. 3,081 ft.; T.P. 2,475 ft.; shot 160 qts. 3,020-31 ft.; hole bridged.
Tex-Mex Pet. Corp. et al's No. 2 Llano-Sloan, 990 ft. from NW and 2,310 ft. from SW, Sec. 16, Blk. 5, H.&T.C. Sur. .... Rigging up.
Tex-Mex Pet. Corp.'s No. 2-B Shell-Sloan, 2,310 ft. from NE and 990 ft. from NW, Sec. 16, Blk. 5, H.&T.C. Sur. .... Cellar.
Tex-Mex Pet. Corp. et al's No. 2 Cal-Archenhold, 990 ft. from NE and 330 ft. from SE, Sec. 23, Blk. 5, H.&T.C. Sur. .... Location.
S. A. Thompson's No. 5-A Johnson, 2,310 ft. from NW and 1,650 ft. from SW cor. of Sec. 9, Blk. 34, H.&T.C. Sur. .... Waiting on cmt. to set; T.D. 2,243 ft.
S. A. Thompson's No. 6 Johnson, 1,650 ft. from NW and 1,650 ft. from SW Sec. 9, Blk. 34, H.&T.C. Sur. .... Location.

WINKLER COUNTY

Harry Adams' No. 2 Scarborough (old well being drilled deeper), 105 ft. from N and 1,000 ft. from E, Sec. 1, Blk. 77, P.S.L. Sur. .... Spudding.
Magnolia Pet. Co.'s No. 4 Scarborough, 1,650 ft. from N line and 330 ft. from W line of Sec. 1, Blk. 77, P.S.L. Sur. .... Fishing; T.D. 2,650 ft.
Magnolia Petroleum Co.'s No. 2 Walton, 330 ft. from N and 330 ft. from E, Sec. 19, Blk. 74, P.S.L. Sur. .... Drlg. 1,225 ft.
McCurdy & Easter's No. 1 Scarborough, 1,650 ft. from W and 2,310 ft. from S, Sec. 1, Blk. 77, P.S.L. Sur.... Rigging up.
Sid Richardson's No. 6-A Scarborough, 330 ft. from N and 990 ft. from W, Sec. 1, Blk. 77, P.S.L. Sur. .... Drlg. 1,950 ft.
Sid Richardson's No. 5-A Scarborough, 330 ft. from W and 190 ft. from S, Sec. 1, Blk. 22-C, P.S.L. Sur. .... Moving in machine.
Sid Richardson's No. 2-B Scarborough, 2,310 ft. from E line and 990 ft. from S line of Sec. 18, Blk. 74, P.S.L. Sur. .... Derrick.
Sid Richardson's No. 2-A State, Skelly, Scarborough, 102 ft. from N and 2,310 ft. E of NW cor. of Sec. 1, Blk. 77, P.S.L. Sur. .... Location.
Sinclair Prairie Oil Co.'s No. 3 W. F. Scarborough, 1,650 ft. from E line and 990 ft. from N line of Sec. 1, Blk. 17, P.S.L. Sur. .... Fishing 2,915 ft.
Sinclair Prairie Oil Co.'s No. 1-C Scarborough, 2,310 ft. from W and 102½ ft. S of SE cor., Sec. 1, Blk. 22-C, P.S.L. Sur. .... Bldg. derrick.

Wildcat Operations in Texas Panhandle

Week Ending January 29

CARSON COUNTY

Company, well, farm name, section and block—	Remarks:
American Ref. Co.'s No. 11 Burnett, 745 ft. from E line, 802 ft. from S line, Sec. 115, Blk. 5, I.&G.N. Sur.	Location.
American Ref. Co.'s No. 12 Burnett, 1,145 ft. from E line, 802 ft. from S line, Sec. 115, Blk. 5, I.&G.N. Sur.	Location.
Huber Pet. Co.'s No. 1 Burnett, C SW Sec. 122, Blk. 5, I.&G.N. Sur.	Drlg. 1,970 ft.
Skelly Oil Co.'s No. 25 (West) Schaffer, 1,320 ft. from S line, 2,200 ft. from W line of Sec. 87, Blk. 4, I.&G.N. Sur.	Set csg.; T.D. 3,034 ft.
United Crude Oil Corp.'s No. 3 Cooper, 330 ft. from N line, 310 ft. from E line, SE Sec. 5, Blk. 9, I.&G.N. Sur.	Rig up.

DALLAM COUNTY

Eben Warner's No. 1 Jarboe, 1,520 ft. from S line, 415 ft. from W line, Sec. 3, Blk. 3, B.&B. Sur.	U.R. at 2,100 ft.

GRAY COUNTY

Anderson & Bean's No. 3 J. C. Vollmert, 330 ft. from S line, 330 ft. from E line, SW Sec. 140, I.&G.N. Sur., Blk. 3	Cellar.
British American Oil Co.'s No. 5 J. L. Phillips, 1,320 ft. S, 330 ft. W of the NE cor. W½ E½ Sec. 127, Blk. 4, I.&G.N. Sur.	Rig up.
British American Prod. Co.'s No. 6 Phillips, 1,259 ft. from S, 330 ft. from W lines of W½ E½ Sec. 127, Blk. 3, I.&G.N. Sur.	Moving in rig.
Cambrian Oil Co.'s No. 2 L. H. Webb, 990 ft. from N line, 330 ft. from E line of E½ NE Sec. 62, Blk. 25, H.&G.N. Sur.	Rig up.
Continental Oil Co.'s No. 5 Carrie Wright, 330 ft. from S, 990 ft. from W lines of NW Sec. 13, Blk. 3, I.&G.N. Sur.	Moving in.
Dixon Creek Oil Co.'s No. 1 D. W. Cary, 2,600 ft. from N line, 1,157 ft. from W line of Sec. 114, Blk. 3, I.&G.N. Sur.	Rig.
Dixon Creek Oil Co.'s No. 2 M. E. Jackson, 1,320 ft. S, 440 ft. W of the NE cor. SE Sec. 133, I.&G.N. Sur., Blk. 3	Drlg. 810 ft.
Dyke Oil Co.'s No. 1 Saunders, NW cor. S½ NW Sec. 3, Blk. 1, B.S.&F. Sur.	Set csg.; T.D. 2,765 ft.
Gulf Prod. Co.'s No. 5 Ellis Cockrell, 330 ft. from N and E lines, S½ Sec. 2, Blk. M-21, T.C.R.R. Sur.	Location.
Hendron et al's No. 1 Husselby, 330 ft. S and E, SW SW Sec. 11, Blk. A-9, H.&G.N. Sur.	Rig.
Hoffman Oil Co.'s No. 3 Finley, 330 ft. from E of NW cor. Sec. 2, Blk. 1, H.&G.N. Sur., but located in Sec. 17, Blk. S, E. E. Cheney Sur.	Rig up.
Magnolia Pet. Co.'s No. 1 Haggard, 330 ft. from S and W lines of NW Sec. 113, Blk. 3, I.&G.N. Sur.	Cellar.
Mazda-Shell's No. 4 Coombs-Worley, 990 ft. from N line, 330 ft. from E line, Sec. 35, Blk. 3, I.&G.N. Sur..	Rig.
Mid-Kansas O. & G. Co.'s No. 4 Webb, 330 ft. from S and W lines of NE Sec. 61, Blk. 25, H.&G.N. Sur. ..	Testing; T.D. 2,501 ft.
Phillips Pet. Co.'s No. 8 J. E. Wright, 330 ft. S, 993 ft. E of NW cor. N½ SW Sec. 13, I.&G.N.R.R. Sur., Blk. 3	Rig up.
Phillips Pet. Co.'s No. 5 Coombs-Worley, 993 ft. E, 330 ft. E of the SW cor. W½ NE Sec. 36, I.&G.N. Sur., Blk. 3	Drlg. 1,375 ft.
Phillips Pet. Co.'s No. 1 Faulkner, 330 ft. from N and W lines of SW Sec. 58, Blk. B-2, I.&G.N. Sur.	Rig up.
Phillips Pet. Co.'s No. 3 Myson, 361 ft. from S, 376 ft. from E lines of W½ NW Sec. 37, Blk. 2-B, H.&G. N. Sur.	Bldg. rig.
Skelly Oil Co.'s No. 1-B L. H. Webb, 745 ft. from E line, 540 ft. from S line of NE Sec. 43, H.&G.N. Sur., Blk. 25	Flowed 372 bbls. first 11 hrs.; T. D. 2,528 ft.
Skelly Oil Co.'s No. 7 Vicars, 1,320 ft. from N line, 330 ft. from W line of E½ NW Sec. 127, Blk. 3, I.&G.N. Sur.	Rig up power unit to test; T.D. 3,284 ft.
Skelly Oil Co.'s No. 9 Vicars, 330 ft. from S, 1,265 ft. from E lines of SW Sec. 127, Blk. 3, I.&G.N. Sur. ..	Rig up.
Skelly Oil Co.'s No. 4 Webb, 330 ft. from N line, 330 ft. from E line, Sec. 16, Blk. 25, H.&G.N. Sur.	Drlg. 1,840 ft.
Skelly Oil Co.'s No. 5-A Webb, 330 ft. from N, 990 ft. from W lines of SE Sec. 61, Blk. 25, H.&G.N. Sur. ..	Moving in rig.
Stanolind O. & G. Co.'s No. 2-C T. B. Cobb, 330 ft. from N and W lines of SE Sec. 165, Blk. 5, I.&G. N. Sur.	Location.

HUTCHINSON COUNTY

J. R. Phillips et al's No. 1 Tom Lewis, 330 ft. S and W, of the NE cor. NE Sec. 7, B.S.&F. Sur., Blk. M-23.	Rig up.
Phillips Pet. Co.'s No. 1 Ludlum, 250 ft. from N and W lines of a square 50-ac. tract in NE cor. Sec. 3, Blk. M-21, T.C.R.R. Sur.	Rig up.
Harry Stekoll Oil Prod. Co.'s No. 2 F. Plemons Whittenburg, 330 ft. W, 1,650 ft. from N lines of 160 acres of the W½ Sec. 13, Blk. 47, H.&T.C. Sur.	Rig up.
Stanolind O. & G. Co.'s No. 2-C Ware, 330 ft. from S line, 330 ft. from E line, Sec. 20, Blk. M-21, T.C. R.R. Sur.	Drlg. 2,800 ft.

WHEELER COUNTY

H. R. Anderson's No. 1 R. L. Harlan, 330 ft. from N line, 330 ft. from E line of NW Sec. 49, H.&G.N. Sur., Blk. 24	Rig up.
Humble O. & R. Co.'s No. 1 J. P. Koons, 330 ft. from S and E lines of W½ NE Sec. 43, Blk. 24, H.&G. N. Sur.	Rig up.
Myers & Kennedy's No. 1 Harvey, 660 ft. from S and E lines of NW Sec. 67, Blk. 13, H.&G.N. Sur.	Spudded.
R. R. Osborne's No. 1-A Admire, 330 ft. from N, 1,520 ft. from E lines of NE of Blk. 13, H.&G.N. Sur. ..	S.D. for tankage; T.D. 2,198 ft.
Parkhurst & Skrivin's No. 1 D'Spain, 330 ft. from N and E lines of E½ SW Sec. 52, Blk. 24, H.&T.C. Sur.	Location.

Trinity Oil Showing in the Haynesville, La., Field; Mississippi Wildcats Are Drilling Deeper

By J. R. CRUMPTON
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Jan. 29. — The Haynesville Partnership's No. 1 Anna Taylor, Section 11-23-8, Trinity test on the flank of the Blossom producing Haynesville Field, Claiborne Parish, came back into the limelight during the past week. A 30-minute drill stem test from the total depth of 4,595 feet developed 7 fourbles of 33 gravity oil and 1,000,000 feet of gas.

Four and one-half inch casing has been set at 4,585 feet and the well will be tested early this week. The pay sand was penetrated only 1 foot after an unsuccessful attempt to recover a core. The test logged the top of the anhydrites at 4,055 feet and contacted Oolitic lime at 4,300 feet. Seven-inch casing was set at 4,250 feet and a drill stem test of the Oolitic formation is the upper Glen Rose developed salt water from 4,300-12 feet. Another test from 4,379-4,408 feet resulted in 32 fourbles of salt water and 8 fourbles of oil and mud. Both of these tests were evidently in the lime formation which produces highly saturated gas in several fields in North Louisiana. The operators believe the present oil show is coming from the first oil-bearing sand encountered since contacting the Trinity horizon, and will take no chances on coring further into it until a thorough test is made at this depth.

Sligo Test

Another Trinity test in a shallow producing gas field has good indications of being a good producer. United Gas Public Service Co.'s No. 1 Skannell Unit, Section 13-17-12, in the Sligo Field, Bossier Parish, tested 15,000,000 feet of gas from Oolitic lime from a total depth of 4,240 feet. The hole will be deepened 10 feet in an effort to increase the flow. A wild flow of gas was encountered in this well, estimated at 75,000,000 feet, at 3,220 feet, but after casing was set at 3,087 feet, and a core cut to 3,225 feet, it was evident the gas had been cut off and the well flowed by heads 75 bbls. of 42 gravity oil daily. The latest development proves this field to have five producing horizons from, and including, the Nacatoch to the Trinity. The pay that came from the 3,200-foot level below the Woodbine was probably the Washita or Fredericksburg in the upper part of the lower cretaceous horizons.

Another wildcat in Bossier Parish will be watched with interest during the coming week. Jensen, Mixon & Gutzler's No. 1 Ledbetter, Section 6-18-11, has set 6-inch casing at 2,103 feet and will make a test of the Blossom sand at a total depth of 2,115 feet. The test is about 5 miles southwest of the Bellevue Field which produced from the Nacatoch from 350 to 400 feet. C. R. Reid's No. 1 Dotys, Section 7-16-11, north of the Elm Grove Field, Bossier Parish, developed salt water on drill stem test from 2,968-3,017 feet. A gas sand was encountered from 2,947-49 feet, but no test was made and the hole was deepened to the present depth. Bossier Parish has several new tests in the making other than the rigs now active. North of the town of Benton, L. E. Norton and others have assembled a block and are moving in rig on No. 1 J. E. Adger in Section 2-20-13. West & McClenaghan have derrick up on their No. 1 Sentell, Section 10-20-13, in the center of a 1,000-acre block. This test is about 1½ miles southwest of the Norton location. In the northwestern part of the parish, Gulf Refining Co.'s No. 1 Luther Ford, Section 8-22-13, a core test on a 10,000-acre block, is drilling at 3,450 feet.

Naborton Field

Baily Gaunce's No. 1 Jenkins, Section 35-13-12, a deep test in the old Naborton Field, DeSoto Parish, is experiencing the trouble predicted after a test was made last week. The crew is fishing for 45 joints of drill stem which was in the hole when the well blew out with a flow of 12,000,000 feet of gas from 3,577 feet. The 5¼-inch casing set at 3,530 feet, has a bad seat and will have to be recemented. In the same parish, Coker Oil Corp.'s No. 1 Mary Huson, Section 8-12-14, is arranging to make a drill stem test of a likely looking sand cored at that depth. The test is in the immediate vicinity of two wildcats drilled several years ago, both of which held promise of making producers but were never thoroughly tested.

The North Louisiana district reported only five completions, one gasser, two oil wells and two dry holes. Hatcher & Evans' No. 10 Hatcher, Section 17-19-4, in the Monroe Field, Ouachita Parish, gauged 2,160,000 feet of gas with 545 pounds rock pressure from 2,189 feet. In the east Zwolle Field, Pelican Natural Gas Co.'s No. 12 Sabine Lumber Co., Section 7-7-11, was completed flowing 500 bbls. daily from 2,445 feet. The well was completed without the use of acid in an area that has furnished a number of good wells within the last few months. In the Converse Field, Helena Oil & Gas Co.'s No. 1 E. L. Graham, Section 20-9-13, had an estimated flow of 350 bbls. daily through 2-inch tubing from 1,955 feet. This well was treated with acid before bailing. J. D. Reynolds' No. 1 Paul estate, Section 9-9-13, after attempting to sidetrack 6-inch casing at 1,700 feet, was junked and abandoned at 1,985 feet. In Webster Parish, J. P. Evans' third test on a block south of Sibley proved a disappointment. His No. 1 Crichton estate, Section 34-18-9, topped the Blossom sand at 2,343 feet and was abandoned as a salt water well in that formation at 2,377 feet. It is not known at this writing whether a fourth test will be made in that vicinity.

Converse Field

The existence of a shallow producing sand under the chalk horizon in the Converse Field was practically proven during the past week by two wells in that area. George W. Pace's No. 1 C. W. Quinn, Section 10-9-13, tested dry from several different depths in the Annona chalk and tested dry after the use of acid at 2,000 feet, near the base of the chalk. Six feet of oil sand was cored from 2,006-12 feet and the hole is standing full of oil, waiting on standard rig to pump. W. F. Lacey's No. 1 Jackson, Section 10-9-13, about 800 feet south of the George Pace well, has for some time been producing from the chalk at 1,953 feet, but despite the use of acid, the flow gradually decreased to a noncommercial well. The hole was deepened to 2,007 feet, and after washing the liner, the well made a head of pipe line oil. The base of the chalk logs at 1,994 feet, and the underlying sand is believed to be Ozan in age, between the base of the Annona chalk and the top of the Blossom which is farther down in the Ozan. The only other sand producing well in the Converse area is from a depth of 3,403 feet, believed to be below the Woodbine in the Washita or Fredericksburg.

MISSISSIPPI

Development has been moving slowly in the Mississippi district since the first of the year, but several wildcats are drilling deeper than the usual depths and will bear watching. In Greene County, United Gas Public Service Co. has surrounded its No. 1 Davis, Section 30-1n-5w, with a large block of acreage and will make a deep test. Sixteen-inch surface casing was set at 214 feet and 10-inch casing at 1,200 feet. B. B. Jones' No. 1 J. A. Stone, Section 18-5n-3e, Hinds County, is making good headway. The top of the black shale was logged at 3,870 feet, top of the chalk at 4,353 feet and the test is drilling in sandy shale at 4,840 feet. In Lamar County, Lamar Oil Co.'s No. 1 Scott, Section 18-2n-14, set a mixed string of 4¾-inch and 5⅞-inch casing at 2,847 feet and tested salt water with a show of gas at 3,010 feet. South of the proven gas area in Rankin County, Cleve Love and others' No. 1 Thomas, Section 10-4-1e, is drilling in red shale at 5,350 feet. Seven-inch casing was set at 4,770 feet after coring a sand with a small show of oil at 4,777 feet. Beavy Corp.'s No. 1 Beavy, Section 33-2n-4e, Simpson County, is temporarily shut down waiting on 7-inch casing at 2,325 feet. A Tallahatchie County wildcat, R. E. Collins and others' No. 1 Bunton, Section 28-26n-3e, stands temporarily abandoned at 2,290 feet, but there is no report at this writing what kind of a test was made. The last previous report gave the test drilling in chalk at 2,228 feet. A recently started wildcat in Wayne County, the Wayne Oil Co.'s No. 1 Gavin School Land, Section 16-9n-7w, has set 12½-inch surface casing at 186 feet and is drilling at 2,990 feet. The Orbit Drilling Co.'s No. 1 Parker, Section 14-14-1e, Warren County, is drilling at 2,710 feet.

Daily Average Runs

The North Louisiana fields showed a net gain of 785 bbls. in the daily runs during the past week, due to an increased run from the Converse and Zwolle Fields. The Arkansas district reported a net decline of 50 bbls. daily from the general average, thus making a net increase of 735 bbls. daily from the two districts. The daily average runs from the several pools were:

NORTH LOUISIANA	
Caddo, light	4,635
Caddo, heavy	1,365
Converse	1,350
Cotton Valley	535
DeSoto and Red River	1,480
Elm Grove	340
Haynesville	3,780
Holly	205
Homer	2,605
Pleasant Hill	225
Sarepta-Carterville	790
Urania	3,070
Zwolle	7,405
Total North Louisiana	27,785
Total previous week	27,000
Increase	785

ARKANSAS	
Champagnolle	1,280
El Dorado	2,485
Lisbon	410
Miller County	965
Nevada	555
Smackover, light	2,585
Smackover, heavy	20,850
Stephens	630
Urbana	2,350
Total Arkansas	32,110
Total previous week	32,160
Decrease	50
Total both states	59,895
Total previous week	59,160
Increase	735

Wildcat Operations in Louisiana-Arkansas

(Rotary operations unless otherwise designated)

North Louisiana

BOSSIER PARISH

Company, well, farm name, section and block— Remarks:

C. E. Reid, tr.'s No. 1 Dotys, 730 ft. S, 618 ft. W, NE SE Sec. 7-16-11 ..... Tested S.W. 3,017 ft.

CADDO PARISH

W. O. Bliss' No. 1 McDade, 330 ft. N and E, SW cor. NW NW Sec. 3-20-15 ..... Set 10-in. 42 ft.; drlg. 300 ft.

CALDWELL PARISH

Hartley et al's No. 1 Taylor, most southeasterly cor. Sec. 42-14-4e ..... Derrick abd.

Terrell & Price's No. 1 La. Central Lbr. Co., 300 ft. N, 200 ft. W, SE cor. NW NE Sec. 18-11-3e ..... Drlg. 1,930 ft.

CATAHOULA PARISH

T. R. Hincey's No. 1 Millsaps, Sec. 32-9-4e ..... Derrick pattern.

CLAIBORNE PARISH

Haynesville Partnership's No. 1 Anna Taylor, 330 ft. N and E, SW cor. SE SW Sec. 11-23-8 ..... Set 4½-in. 4,585 ft.; T.D. 4,595 ft.

DE SOTO PARISH

Coker Oil Corp.'s No. 1 Huson, 200 ft. S, 500 ft. W, NE cor. NW Sec. 8-12-14 ..... Testing 2,841 ft.

Geo. M. LeGrand's No. 1 Faria, 330 ft. S and W, NE cor. SE Sec. 19-11-15 ..... Tested dry, W.O. 2,360 ft.

MOREHOUSE PARISH

Zeiger & Bacon's No. 1 Crossett, 400 ft. N, 300 ft. W, SE cor. Sec. 41-23-4e ..... Set 10-in. 200 ft.

NATCHITOCHES PARISH

Geo. R. Stevens' No. 1 Clarke-Boyce Lbr. Co., 330 ft. N and W, SE cor. Sec. 10-5n-6w ..... S.D. for fuel 2,920 ft.

RED RIVER PARISH

A. F. Sales' No. 1 Raley, 660 ft. N and E of C Sec. 18-13-8, ... Drlg. 2,350 ft.

SABINE PARISH

J. F. Anderson's No. 1 Paul, Sec. 14-9-14 ..... Set 6-in. 1,760 ft.

Frank R. Foster, Inc.'s No. 1 D. E. Stephens, 330 ft. S and E, NW cor. SE NW Sec. 17-9-11 ..... S.D. 3,186 ft.

CONVERSE DISTRICT

Arrock Oil Co.'s No. 1 Hewitt, 330 ft. N and E, SW cor. NE SE Sec. 20-9-13 ..... S.D.; W.O. 1,606 ft.

J. F. Anderson's No. 1 Burkett, 135 ft. N, 655 ft. E, SW cor. NW Sec. 16-9-13 ..... W.O.S.R. 1,921 ft.

Nick Barbare's No. 1 Bolton, Sec. 9-9-13 ..... Set 6-in. 1,705 ft.

Nick Barbare's No. 1 Burkett, 600 ft. N, 900 ft. E, SW cor. NW Sec. 16-9-13 ..... Drlg. 1,900 ft.

(Continued on Page 60)

New Pool South of Davenport, Lincoln County; Oklahoma's Production in Deep Decline

By W. A. SPINNEY

Amerada Petroleum Corp. has opened a new producing area in Lincoln County about 10 miles south of the Davenport Pool. The well is near Willzetta, and is No. 1 Martinek, NW cor. SE Section 35-13-5. It is producing from the Hunton lime, and is estimated at 700 to 800 bbls. a day. The Hunton lime was found at 4,241-4,325 feet and the Viola lime at 4,420-25 feet, which is the total depth. The casing was set at 4,225 feet. The company has not determined whether oil was found in both the Hunton and Viola lime formations. The last reports show the well made 645 bbls. of oil and 245 bbls. of water, swabbing 14 hours and flowing 7 hours. Two 1,500-bbl. storage tanks have been erected and the well will be treated with acid before taking a potential production test of the oil showing.

Oklahoma Production

Estimated daily average production in Oklahoma in the week ending January 27 and in the preceding week was as follows:

Field or pool—	Jan. 27	Jan. 20
Allen	8,895	8,790
Bristow-Slick	10,500	10,250
Cushing-Shamrock	13,000	12,250
Healdton	9,100	9,200
Hewitt	4,800	4,850
Burbank	10,000	10,000
Balance of Osage	21,000	21,000
Lucien	6,635	5,930
Bowlegs	10,635	12,180
Carr City	5,565	6,575
Earlsboro	10,040	10,160
East Earlsboro	13,835	13,950
South Earlsboro	1,380	1,435
Little River	16,650	16,815
East Little River	770	850
Seminole	11,305	12,125
East Seminole	1,045	1,350
Searight	2,060	2,375
Maud	1,215	1,450
Mission	4,765	5,165
St. Louis-Pearson	22,760	23,620
Cromwell	4,850	4,750
Oklahoma City	155,085	217,530
Tatum-Tussey	9,145	8,625
Sholem-Alechem	4,600	4,600
Duncan	4,500	4,500
Tonkawa-Garner-Thomas	6,800	6,750
Holdenville-Fish	6,420	6,575
Wewoka	4,500	4,500
Other pools	85,405	86,590
Total	467,360	532,740

Revision of the proration rules and regulations in the Oklahoma City Field was ordered by the Corporation Commission in an order issued Saturday, January 27. The change permits the restriction of production on a lease basis, instead of a per well basis, in the Simpson sand zone.

The lease basis program is to become effective May 1, but between February 1 and May 1, operators are given the option of making the change and revising their production methods to conform to the rule. Further hearing on the order is set for February 8, at which time the commission is open to recommendations for changes.

Under the new rule all wells in the Simpson sand zone must take an actual gauge test as a base for future proration, the potential to be effective as of April 1, and probably will be made during the month of March. All previous orders and rules on granting of exemptions from taking open flow tests and declined potentials are cancelled. All underproduction credited to wells is cancelled. The only exemption to this rule is where the producer has no market or the well is physically incapable of producing its allowable.

William H. Atkinson and others have announced a location for a wildcat test at No. 1 Huckby, SW cor. Section 9-15-2, near Carney, in Lincoln County. A total of 440 acres are included in the deal. Companies owning acreage in the vicinity include Wilcox Oil & Gas Co., Gypsy Oil Co., Sinclair Prairie Oil Co., Phillips Petroleum Co., Stanolind Oil & Gas Co., and Shell Petroleum Corp. The Wilcox sand is expected around 5,200 feet. The area has been worked with a seismograph survey and most of the major companies have worked subsurface geology.

Osage County

Norbla Oil Co.'s No. 1, SW NW Section 28-23-9, Osage County, was completed. It tested 50 bbls. a day from Bartlesville sand at 2,135-58 feet after a shot of 40 quarts.

Bu-Vi-Bar Oil Co. completed a 50-bbl. well in Bartlesville sand at 2,139-49 feet. It is No. 1-A (twin), NW cor. SW Section 28-23-9.

Mead Oil Co. and Beck's No. 1, Section 10-25-6, Burbank extension, continues to flow around 850 bbls. of oil a day from Burbank sand at 2,807-42 feet.

Same operators' No. 2, NW cor. NE SW same section, was spudding, and No. 3, SE cor. SW, was a rig and tools. No. 4, C SE NE SW same section, was a location. Bay Oil Co., Norbla Oil Co. and Carter Oil Co. were spudding No. 1, NW cor. SE Section 10-25-6. Same companies have made a location for No. 2, SW cor. SE Section 10-25-6.

Carter Oil Co. and Norbla Oil Co. were rigging up at the diagonal offset, SW cor. NE Section 10-25-6.

Midco Oil Co. was building a rig at the north offset to the Mead-Beck's discovery well, SE cor. NW Section 10-25-6.

E. B. Lawson made a location for a test, No. 1-A (twin), 200 feet north and 400 feet east of SW cor. NW Section 30-27-12. J. S. Dewar was drilling at 775 feet in No. 1, NW cor. Section 32-18-11.

Texas Co. was drilling at 250 feet in No. 1, NE cor. SW SW Section 16-23-9. Murringold and others started spudding No. 3, 800 feet north and 1,000 feet west of SE cor. NE Section 25-21-8. Gray & Tolson started up during the week on No. 4, NE cor. SE SW Section 27-21-9.

Noble County

In the Lucien Pool, in Noble County, Stanolind Oil & Gas Co. and Amerada Petroleum Corp. have completed No. 1 Shonwald, C SE SE Section 20-20-2w, for 1,608 bbls. of oil a day. The pay was found in the first Wilcox sand at 5,010-59 feet and in the second Wilcox sand at 5,113-71 feet.

Shell Petroleum Corp. and others were drilling at 1,300 feet in No. 3 Magney, C NE SW Section 17-20-2w. Same company was waiting for cement to harden in No. 1-B Boley, C SE NE Section 18-20-2w. Minnehoma Oil Co. has started drilling No. 2 Shonwald, C SE NE Section 20-20-2w. It was last reported at 1,500 feet. Sinclair Prairie Oil Co. was preparing to spud No. 1 Bohn, C NW NE Section 29-20-2w.

Logan County

In the Crescent area of Logan County Sinclair Prairie Oil Co. was attempting to make a Layton sand well of its No. 1 Short, SW cor. NE Section 27-17-4w. The test was drilled to the Wilcox sand at 6,589 feet and then plugged back to the Layton sand at 4,915-35 feet, where it was shot with 20 quarts. After the shot the hole filled with 2,300 feet of fluid in five hours. It was shut in until tanks have been erected.

Mid-Continent Petroleum Corp. was rigging up to drill deeper in No. 1 Campbell, C SE NE Section 33-17-4w. It has been allowed to flow open once each day, making around 150 bbls. in about an hour from the Wilcox sand at 6,045-85 feet. The total depth of the well is now 6,121 feet.

Anderson and Kerr set surface casing at 110 feet in No. 1 Hull, a wildcat, 455 feet south and 330 feet west of NE cor. SE Section 11-18-4w, Logan County.

Payne County

Magnolia Petroleum Co. was preparing to drill deeper in No. 2 Chevalier, NW cor. SE Section 27-19-4. The old total depth was 3,081 feet. Mulberry Oil Co.'s No. 4 Fisher (twin), SW cor. NE Section 27-19-4, was spudding.

Creek County

The Olive Pool in Creek County is the most active district in the county at the present time. G. L. Berry has completed No. 1 Jackson, SW cor. Section 23-18-8, for 40 bbls. of oil from the Bartlesville sand at 2,648-78 feet.

Gled Oil Co. added another completed well in No. 5 Escoe, SW cor. SE SE Section 27-18-8. The well was swabbing and flowing 125 bbls. of oil a day from Layton sand at 1,304-29 feet. It was shot with 120 quarts.

Boyle & Ball abandoned No. 1 Raabe, SE cor. NW SW Section 32-18-8, at 225 feet.

W. B. Pine has a 40-bbl. well in No. 1 Pine, SE cor. NE SE Section 27-18-8, from Layton sand at 1,324-37 feet. It was shot with 80 quarts. Location has been made for No. 2 Pine, SW cor. NE SE, same section.

Kilgore and others completed No. 4 Tiger, NW cor. NE SW NE Section 34-18-8. It pumped 50 bbls. in 24 hours from Layton sand at 1,266-96 feet. It was shot with 140 quarts. Their No. 6 Wilson, SW cor. NE SE Section 34-18-8, was drilling at 400 feet.

Caprock Oil Co. in the Kellyville district of Creek County completed No. 1 Kelso, SW cor. SE SE Section 17-17-10. It made 5 bbls. a day from the Red Fork sand at 2,078-2,103 feet after a shot of 15 quarts.

Devonian Oil Co.'s No. 5 Bigpond, NE cor. NW NE Section 36-15-7, was pumping 120 bbls. of oil a day from the Wilcox sand at 3,769-3,803 feet.

Phillips Petroleum Co. was drilling at 780 feet in No. 6 Charles, SE cor. SW SE Section 25-15-7, Creek County. Stanolind Oil & Gas Co. and Amerada Petroleum Corp. announced a location for No. 2 Starr, on a community block, in C NE SE NW Section 18-15-8. A. A. Bailey was spudding at No. 1 Harjo, NE cor. NW NE Section 12-16-9, in the Bristow district. J. T. Nunnelee has staked a location for a test, No. 1 Morton, NW cor. SW NW Section 21-17-7.

In the south extension of the Olive Pool, Mead Oil Co. has built a rig for No. 2 Taylor, NW cor. Section 2-17-8. E. Shamblin and others abandoned the location for No. 1 Kelly, NW cor. SE NW Section 2-17-8. Magnolia Petroleum Co. was preparing to spud No. 1 fee, NE cor. Section 3-17-8.

Bert Swift has moved a machine in for a test at No. 1 S. Fields, SW cor. SE Section 7-18-10.

O. O. Owens was spudding No. 1 N. Elle, NE cor. SE SE Section 33-18-8.

Roy Dean and others were swabbing 40 bbls. of oil a day from their No. 2 Grayson (twin), NE cor. SE NW Section 3-18-8. The oil was found in the Bartlesville sand at 2,624-54 feet. It was shot with 120 quarts.

C. O. Buckles was drilling at 1,200 feet in his No. 5 J. Tiger, SE cor. SW SE Section 22-18-8. J. E. Crosbie was drilling at 400 feet in No. 8 Escoe, 660 feet west and 200 feet south of C Section 26-18-8. L. B. Jackson made a location for No. 1 Robert Brown, NE cor. NW SE Section 27-18-8. Merritt and others were spudding No. 8 Pine, CEL NE NE Section 27-18-8.

Tulsa County

In the Bixby district, Tulsa County, H. W. Bowder and others found a showing of oil that rose 500 feet in the hole in No. 3 Hodge, SW cor. SE SE NW Section 5-17-14. The oil was found at 1,478-1,502 feet.

Jackson & Wise's No. 1-A Sims, NW SW NE Section 8-17-14, was spudding. F. D. Misener moved a machine in for No. 3 Hodge, C NE NW Section 8-17-14. The same operator also has a machine on the location for No. 4 Hodge, CSL NE NW Section 8-17-14. Oklahoma Oil Co. found dry sand at a total depth of 1,546 feet in No. 1 Grayson, NW cor. SE Section 7-17-14. It was shut down.

J. E. Wallace has completed No. 9 Bassett, NE cor. SE NE Section 15-14-14, Okmulgee County, for 10 bbls. a day on the pump. The oil was found in sand at 1,760-80 feet. It was shot with 30 quarts.

Penrod and others have a 150-bbl. well in their No. 1 Fox (twin), SE cor. NW Section 22-13-14. The well had Wilcox sand at 2,460-65 feet.

Gled Oil Co. found a showing of oil in No. 1-A Manuel, NW cor. SE Section 22-13-14. The well flowed 150 bbls. of oil the first 24 hours from Wilcox sand at 2,458-70 feet.

Claremont Oil Co. completed No. 4 Fisher, SW cor. NW NE Section 12-15-12. It pumped 200 bbls. of oil the first 24 hours from the Red Fork sand at 1,208-50 feet.

Carr & Peterson were rigging up No. 9 Ware, SE cor. SW SW Section 9-15-14. A-One Oil Co. completed a gas well, No. 1-A Harrison, NE cor. SE Section 25-15-15. The well gauged 500,000 feet of gas a day from the Salt sand at 670-83 feet.

Lincoln County

Wells in the new West Chandler Pool, in Lincoln County, are showing considerable water along with the oil. Magnolia Petroleum Co.'s No. 1 Rice, NW cor. SW NE Section 11-14-3, was pumping 12 bbls. of oil and 200 bbls. of water a day from the Simpson Dolomite at 4,950-70 feet. Twin State Oil Co. was rigging up its No. 1 Cook, SW cor. Section 1-14-3. Indian Territory Illuminating Oil Co.'s No. 1 Stanley, a wildcat, C SE NE NW Section 33-14-3, was preparing to spud.

Magnolia Petroleum Co. set surface casing at 65 feet in No. 4 Telford, SE cor. SW SE Section 7-14-4. Same company was drilling at 100 feet in No. 4 Gillian, SW cor. Section 8-14-4. Slick-Urschel, Inc., set surface casing at 86 feet in No. 3 Mayer, NE cor. NW NW Section 17-14-4.

Oklahoma County

In the Oklahoma City Field of Oklahoma County, Indian Territory Illumi-

nating Oil Co. has completed No. 2 Jarvis, 990 feet north and 1,147 feet west of C Section 26-11-3w. The well made 631 bbls. of oil in four hours and 28,000,000 feet of gas a day from the Wilcox sand at 6,463-6,547 feet.

Springrose Drilling Co. has set surface casing at 290 feet in No. 1 Beaucamp, 600 feet north and 175 feet east of SW cor SE Section 22-11-3w. Anderson & Kerr were building a rig for No. 1 Fruitland Addition, 360 feet south and 673 feet east of C Section 15-11-3w.

Okfuskee County

In Okfuskee County Helmerick and Payne staked one new location and were drilling at No. 1 Lashley "B," NE cor. NW SW Section 25-10-10. The 8-inch casing was set at 3,238 feet. New location was for No. 1 Lashley, SE cor. NW SW Section 25-10-10. E. L. Robinson and others were drilling at 1,485 feet in No. 4 Deer, C NE NW Section 2-10-9. Phillips Petroleum Co. and others staked a location for No. 2 Fish, SE cor. SW SE Section 25-10-11. Olean Petroleum Co. has a rig on the ground for No. 3 Fish, SE cor. NE NW Section 36-10-11.

Seminole County

Sinclair Prairie Oil Co. completed No. 2 Tiger, SW cor. NE NW Section 1-8-6, Seminole County. It swabbed 360 bbls. of oil in 48 hours from the Wilcox sand at 4,160-80 feet. It was shot twice, the first time with 14 quarts and the second with 25 quarts.

Mid-Kansas Oil & Gas Co. completed No. 7 Davis, SE cor. NE NE NW Section 30-8-8, in the Wewoka district, by swabbing 185 bbls. of oil in 24 hours from the Wapanucka at 3,034-73 feet.

Carter Oil Co. and others, in the Keokuk Falls district of Seminole County, were preparing to plug back No. 1 Community Cossey, C W half SE NE Section 23-11-6. The test was drilled to the Wilcox sand at 4,620-24 feet and will now be plugged back to the Simpson lime at 4,541 feet. Same companies were rigging up to start drilling No. 1 Community Randolph, C S half SE NE Section 35-11-6.

M. J. Joyne has staked a location for a test, No. 1 Brown, NW cor. SW SE Section 27-8-5. Manahan and others were rigging up for a test, No. 1 Reed, NE cor. NW NE Section 35-6-7.

Pottawatomie County

Hall-Briscoe's No. 4 Brown, NE cor. SW NW Section 33-7-4, Pottawatomie County, was completed after it swabbed 938 bbls. of oil and 530 bbls. of water in 48 hours from Simpson Dolomite at 4,169-78 feet. It had been treated with 1,000 gallons of acid. Moebris and others also completed No. 1 Sullivan, SE cor. SW SW Section 27-7-4. It pumped 40 bbls. a day from 4,162-4,266 feet. The total depth was 4,370 feet.

Carter Oil Co. swabbed 252 bbls. of oil and 220 bbls. of water in 24 hours from No. 2 Monnett, SW cor. SE SW Section 35-7-4. The oil was found in the Simpson Dolomite at 4,228-29 feet.

Magnolia Petroleum Co. was drilling at 150 feet in No. 3 Walker, SW cor. NE Section 21-7-4.

Keyokla Oil Co.'s No. 1 McGee, SE cor. SW SE Section 4-7-4, flowed 427 bbls. of oil in 24 hours from Hunton lime at 3,715-84 feet. Same company was moving in material for No. 1 Hines, NE cor. NW NE Section 9-7-4.

Morgan Petroleum Co. has a rig on the ground for No. 1 Robertson, NE cor. NW SE Section 30-8-4.

Deep Rock Oil Corp. and Margay Oil Corp. were drilling at 1,490 feet in No. 2 Adams, NW cor. NE Section 11-6-3, a wildcat test. Marydon Oil Co. dug cellar for No. 1 Long, NW cor. NE Section 5-6-4. J. Garfield Buell and others have erected a rig for No. 1 Huddleston, SE cor. SW SW Section 24-6-4. Gypsy Oil Co. and others were building a rig for No. 3 Tenwas, C N half S half NW Section 25-6-4.

Hughes County

In the West Holdenville Pool, Hughes County, Winona Oil Co. and Jarvis-Holm have completed their No. 2 Campbell, CEL NE SW SW Section 20-7-8. It swabbed 140 bbls. of oil in 24 hours from the Booch sand at 2,815-73 feet. L. M. Rouch's No. 1 Moore, NW cor. NE NE Section 22-7-8, was completed for 30 bbls. of oil in 24 hours from the Calvin sand at 1,175-1,200 feet. Troup & O'Conner have put their No. 5 Haskett, SW cor. SE Section 15-7-8, on the pump and completed it for 10 bbls. a day from the Calvin sand at 1,187-1,206 feet. The same operators' No. 6 Haskett is a machine moving in.

Elliott and the Shell Petroleum Corp. found a showing of oil in their No. 2 Pickens, NE cor. SW NE Section 15-7-8, in the Calvin sand at 1,156-83 feet. It swabbed 92 bbls. in 24 hours. Watkins Drilling Co. and others were rigging up No. 2 Jacobs, SE cor. NW NE Section 16-7-8. Magnolia Petroleum Co. was drilling No. 2 Witty, 1,180 feet south and 882 feet east of NW cor. SW Section 22-7-8.

Pontotoc County

In the Fitts Pool, Pontotoc County, H. L. Wirrick's No. 1 fee, SE cor. SW Section 29-2-7, was flowing 100 bbls. a day through the 6-inch casing from the Sylvan at 3,451-54 feet.

W. A. Delaney's No. 1 Harden, NW cor. Section 30-2-7, flowed through the casing 135 bbls. of oil in one day and the standard tools were being rigged up to clean out. It was producing from the Sylvan at 3,960-62 feet.

Manahan and others were building a rig for No. 1 Reynolds-Wagoner, C SW NE SE Section 18-2-7. Schoner Brothers were drilling deeper in No. 1 Standbridge, NE cor. NW SE Section 25-5-4. It was drilling at 2,635 feet. Concord Oil Co. was drilling at 150 feet in No. 1 Flatt, NE cor. SE Section 36-5-4. Davis Drilling Co. was rigging up No. 1 Taylor, SW cor. NE SE Section 29-5-5. H. & M. Drilling Co. has erected a rig for No. 1 Jones, SE cor. NE Section 25-5-8. Michealson and others have moved a machine for their No. 1 Wallace, NE cor. SW NW Section 29-5-8.

Carter County

Carter Oil Co. has completed No. 2 Perkins, C NE SE SE Section 4-1s-3w, Carter County, flowing 20 bbls. a day from sand at 2,645-2,821 feet. Manson Oil Co. has completed No. 1 Lucas, C SE NE Section 14-1s-3w, for 10 bbls. a day from a total depth of 2,474 feet. Amos Drilling Co. has a 900-bbl. well in No. 1 Hooks-Mitchell, NW cor. SE NW Section 19-1s-2w. The oil was found in Tatums sand at 1,181-1,204 feet. F. E. Robertson's No. 1 Parish, SW cor. SE SE Section 22-2-2w, is an abandoned location. Cox & Hamon also abandoned their location for No. 1 Cox, C NE NW Section 10-1s-3w.

Cotton-Belt Oil Co. set surface casing at 40 feet in No. 12 Rexroat, NE cor. NW NW SW Section 10-4s-2w. Carter Oil Co. staked a location for No. 2 Humble-Hefner, C NW NE NE Section 16-2-2w. Mudge Oil Co.'s No. 1 Walker, C SE NE SW Section 25-1s-3w, was a new location. Magnolia Petroleum Co. made a location for No. 1 Williams, C SW NE NW Section 19-1s-2w.

Stephens County

In the southern part of the state, in Stephens County, Lloyd Oil Co. has abandoned No. 1 McKimmons, SW cor. Section 15-1-4w, at a total depth of 3,549 feet.

Owl Oil Co. has moved in a machine for No. 7 McLendon, NE cor. NW Section 9-3s-5w. Skelly Oil Co. was drilling at 245 feet in its No. 22 Harley, C NE SE NW Section 24-2s-4w.

Mudge Oil Co. has abandoned its No. 24 Woods, NW cor. SW SW NW Section 26-1s-5w, at a total depth of 900 feet. Same company was testing a sand at 580-95 feet in its No. 27 Woods, SE cor. NW SW NW Section 26-1s-5w. Same company has staked a location for No. 28 Woods, SW cor. NE SW NW Section 26-1s-5w.

Jefferson County

Hughes and others' No. 1 Black, NE cor. NW NW SE Section 16-7s-5w, Jefferson County, was abandoned at a total depth of 786 feet. It found only a small showing of oil at 753-78 feet.

Marshall County

Mitchell and Kilborne were pumping 7 bbls. a day from No. 1 Burge, NE cor. SE SE Section 25-7s-5, from sand at 531-46 feet. Same operators have moved in a machine for No. 2 Burge, NW cor. NE SE SE Section 25-7s-5.

Wildcat Operations in Oklahoma

Week Ending January 27, 1934

Northern Oklahoma

ALFALFA COUNTY

Company, farm and location—	Remarks:
Acre et al's No. 1 Acre, C SW NE Sec. 14-24-11w	Drlg. 6,375 ft.

BECKHAM COUNTY

West Oak Gas Co. et al's No. 1 Powell, NW SW Sec. 11-9-25w	Drlg. 2,545 ft.

CADDO COUNTY

Denver Prod. & Ref. Co.'s No. 1 Noe, NW SW SW Sec. 34-10-10w	T.D. 9,540 ft.; C.O.; D.P. froze.

COMANCHE COUNTY

Starrs et al's No. 1 Crutcher, C NE Sec. 11-1-12w	S.D. 100 ft.

DEWEY COUNTY

Continental Oil Co.'s No. 1 Beaumer, SW NE Sec. 8-19-20w	Drlg. 3,472 ft.

GARFIELD COUNTY

Indian Terr. Illum. Oil Co.'s No. 1 Clark, C NW NW Sec. 34-21-6w	T.D. 6,397 ft.; C.O.

GARVIN COUNTY

Anderson & Kerr's No. 1 Rodke, NW NE NW Sec. 21-4-1w	Rig.
Phillips Pet. Co.'s No. 1 Dennis, SE NE Sec. 9-4-1	Moving in material.

HUGHES COUNTY

J. B. Hill's No. 1-A Perkins, C W½ SW SW Sec. 7-5-9	Drlg. 585 ft.
Birk-Kan.'s No. 1 Gardner, NE NW Sec. 12-6-9	Spudded and S.D.
Scruggs et al's No. 1 Black, NE Sec. 12-9-10	Drlg. 2,940 ft.

KAY COUNTY

Burton Lewright et al's No. 1 Leseman, SW NE SE Sec. 4-26-3	Rig.

KIOWA COUNTY

Erickson et al's No. 1 Heatherton, NW SW Sec. 14-6-16w	Drlg. 545 ft.

LINCOLN COUNTY

Amerada Pet. and Stanolind O. & G. Co.'s No. 1 Martinek, NW SE Sec. 25-15-4e	P.B. to 3,915 ft.; drlg. 4,425 ft.
Huckleberry et al's No. 1 Boland, SW cor. Sec. 25-12-3e	C.O. 5,092 ft.
I. T. I. O. Co.'s No. 2 Stanley, C SE NE NW Sec. 33-14-3	Rigging.

LOGAN COUNTY

Anderson & Kerr's No. 1-A Hull, 455 ft. S, 330 ft. W of E cor. Sec. 11-18-4w	Drlg. 110 ft.
W. N. Anthony's No. 1 Fruin, SE SW Sec. 4-16-1	Rig.
Amerada and Stanolind's No. 1 Fouts, NW NE Sec. 14-17-1w	Drlg. 4,005 ft.
Barnsdall Oil Co. et al's No. 1 Seyller, NE SE Sec. 12-15-4w	Drlg. 5,487 ft.
Jadeka Dev. Co.'s No. 1 Frakes, C SW NE SW Sec. 16-15-6w	T.D. 2,245 ft.; fishing.

MUSKOGEE COUNTY

J. S. Routt et al's No. 1 Escoe, CWL SE NE Sec. 17-13-17	T.D. 1,200 ft.; S.D. for 10-in. csg.

OKLAHOMA COUNTY

Springrose Drlg. Co.'s No. 1 Edwards, C SE SE Sec. 19-11-1	Cmtd. csg. 5,976 ft.; C.O.

PAYNE COUNTY

L. G. Hulse's No. 1 Sloan, SW NW SE Sec. 19-17-3	T.D. 1,474 ft.; P.B. to 1,226 ft.
Mid-Continent Pet. Corp.'s No. 1 Swank, SE NE NE Sec. 19-19-3	Misener 4,544-55 ft.; drlg. 4,594 ft.

PITTSBURG COUNTY

Moffett & Hall's No. 1 Jones, C NE NW Sec. 14-8-14	Lost tools; T.D. 3,200 ft.; S.D.
Stencil Oil Co.'s No. 1 Chunn, SE NW Sec. 29-4-14	Rig.

PONTOTOC COUNTY

Galbreath's No. 1 Stafford, NE SE SE Sec. 31-2-6	T.D. 1,380 ft.; fishing.
W. E. McGraw's No. 1 Mayhue, NE Sec. 19-2-6	Fishing 1,871 ft.
Stanolind-Amerada's No. 1 Aldridge, C N½ S½ SE Sec. 2-5-7	Fishing 4,295 ft.
Delaney et al's No. 1 Dawes-Hardin, SE NW Sec. 30-2-7	Drlg. 1,250 ft.
Williams' No. 1 Kroth, NE SE Sec. 33-3-4	H.F.W. 1,977 ft.

POTTAWATOMIE COUNTY

Deep Rock and Margay's No. 2 Adams, NW NE Sec. 11-6-3	Drlg. 1,480 ft.
Atlantic Oil Prod. Co.'s No. 1 School land, C NE NW NW Sec. 36-10-4	P.B. to 4,240 ft.; drlg. 4,249 ft.; to set whipstock.
Texas Co.'s No. 1 Terfertiller, NW NE Sec. 4-8-3	Drlg. 5,165 ft.

SEMINOLE COUNTY

John Burns' No. 1-B Shepard, SE NE Sec. 4-8-3 (O. W.D.D.)	T.D. 1,658 ft.; S.D.
Amerada Pet. Corp.'s No. 1 Parsons, 330 ft. N of S line of Lot 7, Sec. 12-11-6	Csg. cmtd. 4,430 ft.; bailing.
Flemlee et al's No. 1 Bowlegs, SE NE SW Sec. 1-7-7	S.D. 1,360 ft.

WASHITA COUNTY

McWhirter & Bost's No. 1 Hall, SW SE SE Sec. 28-8-19w	T.D. 2,155 ft.; lost sand pump.

Southern Oklahoma

ATOKA COUNTY

J. D. Boukan's No. 1 Howard, NW SW NW Sec. 20-2s-10e	Drlg. 1,135 ft.
Brookshire et al's No. 1 Rowland, NW NE NE Sec. 18-3s-10e	C.O. 3,443 ft.

CARTER COUNTY

Kilgore et al's No. 1 Williams, SE NW SW Sec. 30-1s-2w	Drlg. 1,489 ft.

GARVIN COUNTY

National Prod. Co.'s No. 1 Littrell, NE cor. Sec. 31-3n-3w	S.D. 299 ft.

JEFFERSON COUNTY

Keil & Wiley's No. 2 O. W. Seay, SW NW NW SW Sec. 35-6s-5w	Drlg. 1,607 ft.

MURRAY COUNTY

A. E. Harden's No. 1 Sadler, NE Sec. 19-1-2	Rig.
T. E. Revells et al's No. 1 Wolfe, NE cor. Sec. 18-1-2	Running 8-in. pipe; T.D. 1,500 ft.
F. E. Revells' No. 1 Wolfe, NE cor. Sec. 18-1n-2e	T.D. 2,090 ft.; csg. frozen at 2,060 ft.

PUSHMATAHA COUNTY

J. V. Scrivener et al's No. 1 Swink, C NE SE Sec. 29-6s-20e	Setting csg. 410 ft.
Whitehead et al's No. 1 Messer, SE SW SW Sec. 35-2s-15e	T.D. 2,405 ft.; S.D.

STEPHENS COUNTY

J. W. Madison's No. 1 Tussey, SW SE NW Sec. 24-1n-4w	S.D. 3,210 ft.
Lloyd Oil Co.'s No. 1 McKimmons, SW cor. Sec. 15-1n-4w	Abd. 3,549 ft.
MacMo Oil Co.'s No. 1 Butler, SW NW SE Sec. 36-2s-7w	S.D. 20 ft.

TILLMAN COUNTY

J. H. Everett's No. 1 Crane, SW cor. Sec. 15-3s-14w	Rig.

DEVELOPMENT PROGRAMS

Another call has been sent to operators in new oil districts of the Mid-Continent area to file immediately proposed programs of development, since the present tentative approvals expire January 31. Copies of all programs are to be filed with Secretary Ickes and with J. D. Collett, general chairman of region No. 4, under the code, at Fort Worth, Tex. Programs of development apply to all pools discovered since adoption of the code and to fields having less than 10 producing wells as of January 1, 1933.

Recently approved agreements include the Sasakwa Townsite and Lucien Pools in Oklahoma, Ellenwood Pool and Richardson Pool in Kansas, the Hilbig Pool in Southwest Texas and the Caillou Island Dome in Terrebone Parish, in Gulf Coastal Louisiana.

Splendora District Now the Center of Activity; Montgomery County Play Rivals Tomball

By NEIL WILLIAMS
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., Jan. 29. — The Splendora district of eastern Montgomery County just westward across the line from the new Cleveland Field, Liberty County, continues the main center of leasing and royalty buying activity on the Gulf Coast. The extent of the play, rivaling that of the Tomball-Huffsmith area which took place a year ago, now is attracting majors as well as the smaller independents and the demand for acreage is sending prices skyward. Taking in the Shepherd vicinity, the larger companies are intensively rechecking the district with geophysical instruments.

Among the more important trades which have just taken place is the purchase by Humble Oil & Refining Co. of approximately 3,500 acres from Standard Oil Co. of Kansas at Splendora. In this, the latter company was reimbursed the $310,000 which it invested in the area and retains a one-twenty-fourth overriding royalty. Humble Oil & Refining Co. also has acquired an additional 4,000 acres in the Walker County School Land Survey and is reported to have to drill a well on this within the next 30 to 60 days.

Humble, Gulf Production Co. and others are actively taking on additional holdings throughout the play. At this time, that country is pretty well bogged down as a result of continued rains and this has slowed up work very materially.

Steen Drilling Co.'s No. 1 Texas Long Leaf, keynote test for the Splendora area, started operations during the week and at latest report was down 1,419 feet, where 13⅜-inch surface casing had been cemented.

Liberty County

Brown & Wheeler's No. 1 Foster, known more commonly as the Parsons well, in the Ann Holhousen Survey, Liberty County, approximately 6 miles south of Gulf Production Co.'s wildcat producer and discovery well of the Cleveland Field, seems to be a little out of the picture, judging from palentological reports. These reports show the formations so far to be running substantially lower than the Gulf well. According to the latest information available, the test is at a total depth of 5,193 feet, where operations have been shut down temporarily due to high water.

The same operators have just started a second test, on the Goldberg tract in Lot 14, J. Eldridge Survey, 2 miles southwest of the Gulf Production Co.'s Kirby well. This should be a particularly important test, and with Gulf Production Co.'s second test on the Kirby land, located 1,866 feet south of the discovery well and which is drilling below 1,100 feet, and Gulf's No. 2 Grogan, 4,000 feet north of the discovery in the Clayton Harper Survey, which now is rigging up, should throw considerable light on the field.

United Pipe Line Co. is laying a 10-inch gas line from a point south of the town of Cleveland to the Conroe Field, a distance of 16 miles, through which fuel will be available for drilling development in the Cleveland and Splendora district.

As a result of a recent special hearing before the Railroad Commission, drilling regulations, similar to those at Conroe, have been put into effect at Cleveland. It is generally assumed that the latter field will be much like Conroe in structural and sand conditions. The sand from which the discovery well was completed at a total depth of 5,728 feet is comparable to what is known as the Upper Cockfield sand at Conroe.

Tomball Field

Four more oil producers were added to the Tomball Field during the week, these being Texas Co.'s No. 3 E. Mueller, 30 bbls. per hour initial, twelve-sixty-fourths inch choke, 5,578 feet; Humble Oil & Refining Co.'s No. 1 Werndorf, 27 bbls. per hour, 5,576 feet; same company's No. 1 Scherer, 25 bbls. per hour, 5,588 feet, and same company's No. 1 J. L. Moody, 21 bbls. per hour, 5,588 feet.

Stanolind Oil & Gas Co.'s No. 1 Brautigan, a mile northwest of production of the Tomball district, cored salt water sand from 5,661-90 feet. This well passed up a sand at 5,487-5,525 feet, in which a drill stem test showed 275 pounds dry gas, and to which the well can come back if it fails to find production at lower levels.

Seven new tests were started the past week in the active drilling development which has been going on in the Tomball district, and although the field has not lived up to the early expectations as to prolificness, a substantial daily potential production now is being built up.

Livingston Field

S. F. Gist Oil Corp.'s No. 1 Kingsbury, northeast extension test for the Livingston Field in southern Polk County, looked like a gas well when it was being brought in late in the week. At that time it had not been completed and made no fluid but it gauged 1,000 pounds working pressure through the tubing. When shut in it built up a pressure of 1,900 pounds. A setting of 40 feet of screen and 60 feet of blank was made at a total depth of 4,242 feet.

Polk County Oil Co.'s No. 3 Allen-Hibarger, at Livingston, completed a couple of weeks ago as a wet gasser at a total depth of 4,334 feet, has been killed a second time and at latest report had cored 10 feet deeper, the owners anticipating making an oil producer of it.

LaPorte District

Some interest has been attached to the LaPorte district of southeastern Harris County, where some active trading of leases and royalties has been going on with the drilling of Turnbull and Irwin's No. 1 Dunn, a wildcat in the Enock Brenson Survey. Late in the week the well was drilling below 5,475 feet. A derrick is up for a second test in this area, this to be drilled by Glenn McCarthy on the C. S. Preston land in the William Jones Survey, about 3 miles to the south of the Turnbull and Irwin wildcat. These are located on a geophysical prospect.

Greta Field

At Greta, Refugio County, in the lower coastal country, United Production Co. has completed its No. 12 Fox estate as the first well in the 3,500-foot sand. This well, on the extreme southwest end of the field, is in the sand at a total depth of 3,507 feet and gauged a pressure of 300 pounds on the casing and 100 pounds on the tubing. No fluid gauge is available at this time. Floboots Oil Corp.'s No. 1 Baurer, on the east side of the field, which also attempted to make a well in the sand at 3,493 feet, tested salt water and is to be deepened.

Nine additional wells were completed at Greta in the main producing horizon at 4,400 feet during the week. Abandonment of Trinity Drillers' No. 1 Welder, J. T. McGrew Survey, apparently has placed a defining marker on the extreme north. This well tested dry in the 4,400-foot horizon and carried deeper to a total depth of 6,009 feet but failed to find anything.

Nesral Oil Co.'s No. 1 Ira Heard, deep test on the south side of the Greta Field, has failed to find production down to 6,737 feet and has been plugged back to a sand at 2,100 feet in an effort to make a gas well there. This is in the same area in which Nesral Oil Co. has a well producing from a 5,900-foot sand, the only production so far below the 4,400-foot horizon. Nesral's No. 1 V. E. Heard, also in the same area and the third deep sand test for the company, is at a total depth of 6,010 feet, but is sidetracking at 4,700 feet. All these wells missed production in the 4,400-foot sand.

Roanoke

Humble Oil & Refining Co. as yet has not made a well in its No. 2 DeVilbiss at Roanoke, Jefferson Davis Parish. After resetting screen at the same depth of 8,423 feet, the well was being swabbed and at latest report was showing oil and salt water. Shell Petroleum Corp.'s No. 1 Kratzer, a mile north of the Humble wildcat, has cleaned the hole after a long fishing job at 4,210 feet and now is drilling deeper at 4,232 feet.

Iowa Field

At Iowa, on the Calcasieu-Jefferson Davis Parish line, production in the main sand at 7,000 feet was extended a half mile west by the completion of Magnolia Petroleum Co.'s No. 5 Waite, which flowed initially 840 bbls. in 24 hours through a fifteen-sixty-fourth inch choke from the sand at a total depth of 6,970 feet. On the extreme south end of the field, Shell Petroleum Corp.'s No. 1 Johnson is expected to make a well in a sand at 6,777 feet after plugging back from a total depth of 6,804 feet, where it was in salt water sand. At latest report it was flowing but no gauge had been taken.

George W. Strake is ready to spud in his No. 1 Pedigrew, located 200 feet each way out of the SW cor. of Section 9-9s-6w, 9,500 feet east of the nearest production at Iowa. Spudding has been delayed pending laying of a fuel line.

Lockport

Magnolia Petroleum Co. so far has failed to open a new deep sand in its No. 4-A Watkins, in the old part of Lockport, Calcasieu. At a total depth of 6,890 feet the well was swabbed dry and screen now is being pulled. This is the deepest test in the old part of the field, although deep production has been obtained in the west extension of the field.

Union Sulphur Co.'s No. 1 Vincent, deepest test ever drilled in the Vinton Field, Calcasieu Parish, late in the week was down 5,630 feet in shale. Heaving shale along the sides of the Vinton Dome has prevented deep drilling there in the past.

Buckeye

At Buckeye, Matagorda County, Texas, United North & South Development Co. has shut down its No. 1 Sheldon (Unit 25) after reaching a total depth of 8,580 feet. It may be abandoned temporarily pending the drilling of another well. That company's No. 2 Stoddard (Unit 6) still is making hole and at latest report was in hard sandy shale at 8,648 feet.

Louise Field

Pure Oil Co.'s No. 1 Wallace Houston, Louise, Wharton County, still is on the unproductive list after several weeks of swabbing and washing. It is in sand at a total depth of 6,451 feet and is one of eight wildcats drilled simultaneously on the block. Three of these have made small producers in as many different sands. Location was made during the week for the first additional test since the starting of the eight wildcats, this location being No. 2 Stewart, 990 feet out of the southwest corner of the Stewart 160-acre tract in the Morris and Cummings Survey, Section 25. This is southwest of No. 1 Stewart, the discovery

(Continued on Page 58)

Gulf Coast Fields and Wildcats

Week Ending January 27, 1934

Company, farm and location—	Remarks:
MANVEL—BRAZORIA COUNTY	
Texas Co.'s No. 6-A Belcher, H. N. Little Sur., S 42 deg. W 2,400 ft., S 48 deg. E 400 ft. from N cor. lease.	T.D. 5,476 ft.; cmtd. 7-in. csg. 5,532 ft.; standing.
Texas Co.'s No. 7-A Belcher, 1,430 ft. S 48 deg. E, 900 ft. W 42 deg. E from NW cor. of W. T. Belcher "A" lease, H. N. Little Sur.	Coring sand and shale 5,853 ft.
Texas Co.'s No. 9-B Belcher, 2,691 ft. N 42° E from S cor. H. N. Little Sur., and 330 ft. NW at R/A from survey line	Derrick.
Texas Co.'s No. 4 O. F. Ewing, 415 ft. from NW line, Lot 8, and 787.2 ft. from NE line, H. N. Little Sur.	Drlg. clay 139 ft.
Texas Co.'s No. 1 S. Scopal, 5,835 ft. from S line and 348 ft. from E and W lines of Lot 25, H.&T.B. Sur., Sec. 74	Rig.
STRATTON RIDGE—BRAZORIA COUNTY	
Amerada Pet. Corp.'s No. 5 Seaborn, Austin-Williams Sur., 600 ft. E of No. 3 and 229 ft. S at R/A.	Drlg. sandy lime 5,419 ft.
BARBERS HILL—CHAMBERS COUNTY	
Mills Bennett Prod. Co.'s No. 1-D Barber, 73 ft. S, 65 ft. W of NE cor.	Sandy shale and lime 4,786 ft.; fishing.
Mills Bennett Prod. Co.'s No. 4 Means, 150 ft. W of No. 3, Henry Griffith League	Drlg. shale 5,454 ft.
Humble O. & R. Co.'s No. 5-B Kirby, Henry Griffith League, 928 ft. W of E line, 537 ft. N of S line of tract	Cap rock 1,275-88 ft.; cmtd. 16-in. O.D. csg. 1,263 ft.
Sinclair Prairie Oil Co.'s No. 15 Wilburn, Henry Griffith League, 150 ft. W of No. 14	T.D. 4,188 ft.; sidetracking second time 3,511 ft.
Sinclair Prairie Oil Co.'s No. 17 Wilburn, 125 ft. N of S line, 150 ft. W of No. 16, H. Griffith League	Second hole; cavity 1,075 ft.
Sun Oil Co.'s No. 15 Wilburn, 405 ft. from E, 50 ft. from W line	Drlg. salt 1,918 ft.

New Potentials in Kansas Flush Pools; Prospect of New Pool Near Wichita; Output Down

By W. A. SPINNEY

Ramsey Petroleum Co. and others are completing a well on the Chase townsite of Rice County, Kansas, which gives indications of being a large producer. The well is No. 1 McFarland, on Block 2, located approximately SW cor. NE SE Section 31-19-9w. The well is estimated from 800 to 900 bbls. a day. It is producing from Siliceous lime at 3,226-38 feet. Shortly after it was drilled into the lime it was treated with acid. It will be put to pumping shortly.

Prospects for opening another pool in the area 5 miles north of Wichita were promising. The test is W. A. Cameron and others' No. 1 Funk, SW cor. SE NW Section 11-26-1, about a mile west of Kechi. Several showings of oil and gas have been found in the shallow formations. Gas was found at 750 feet, oil at 1,250 feet, and in the Kansas City-Lansing lime at 2,730-35 feet. It was drilling to the chat at 2,875 feet. The offset acreage is held by the Phillips Petroleum Co. and others. A test drilled a half mile to the northwest several years ago had several showings of oil and gas. This is the only test that has been drilled in the immediate vicinity.

The failure of the Atlantic Oil Producing Co. to open a new oil pool with its No. 1 Bradbridge, C SE NW Section 1-24-16w, Edwards County, was a disappointment to landowners in that part of the State. The test had some oil and gas in the Kansas City-Lansing lime at 3,700 feet and it was plugged back to that horizon after drilling to a total depth of 4,500 feet.

Production by Pools

Estimated daily average production of important pools in Kansas for the week ending January 27, and for the preceding week was as follows:

Field or Pool—	Jan. 27	Jan. 20
Hollow	9,710	11,500
Ritz-Canton	13,020	13,130
Voshell	7,620	6,745
Sedgwick	4,820	8,545
Nikkell	3,330	4,495
Ellsworth County	2,293	4,070
Barton County	490	746
Rice County	6,460	6,830
Reno County	2,714	2,138
Ellis County	379	744
Kingman County	1,052	0
Stafford County	441	866
Russell County	5,545	5,445
Greenwood County	11,500	11,000
Butler County	17,950	18,000
Other pools	20,111	20,391
Total	107,435	114,645

Kansas Potentials

The flush areas in Kansas have a daily potential of 238,368 bbls. from 673 wells, according to recent figures of the state umpire, T. A. Morgan. The largest potential area in the state is the Hollow Pool, in Harvey County, 64,706 bbls., from 87 wells.

McPherson County has four major producing areas, Ritz-Canton, with a daily potential of 37,937 bbls. from 221 wells; Nikkell Pool, daily potential of 30,942 bbls. from 32 wells, and Voshell Pool, with a potential of 19,495 bbls. from 117 wells.

Outside of McPherson County, the flush areas include Burrton, Breford, Brandenstein, Byers, Caldwell, Chase, Cunningham, Gates, Gideon, Greenwich, Haury, Heiken, Isern, Orth, Ploog, Raymond, Richardson, Sharpe, Ellinwood, Steckel, Stoltenberg, Stratman and Thode.

New Pipe Lines

A new pipe line to the Cunningham area in Kingman County gives the gas production an outlet. The Kansas Pipe Line & Gas Co. has contracted to purchase the gas from Skelly Oil Co.'s wells in the Cunningham Pool, and is building a pipe line to the field. The line will be approximately 6 miles long and will connect with the company's main 18-inch line about a mile west of Cunningham.

The Cunningham Pool will have another direct pipe line outlet for oil by spring if the present plans of the Skelly Oil Co. are carried out. The company has surveyed a right-of-way for an oil pipe line from the Burrton Pool in Reno County, to the Cunningham Pool, in Kingman County, and construction work on the project is expected soon. Oil from the wells in the Cunningham Pool now is shipped by Skelly Oil Co. from a 10-car loading rack on the Santa Fe at Cunningham to the company's refinery at El Dorado, in tank cars.

McPherson County

Sinclair Prairie Oil Co. has completed its No. 2 Stucky, C E half E half SE Section 28-20-3w, McPherson County. It made 233 bbls. of oil and 330 bbls. of water in 24 hours from Wilcox sand at 3,374-3,418 feet. It was shot with 20 quarts of explosive.

Gypsy Oil Co. completed its No. 3 Stucky, SW cor. SE NE Section 33-20-3w, after it had produced 372 bbls. of oil and 13 bbls. of water in 16 hours from Wilcox sand at 3,355-90 feet.

Keys Petroleum Co. completed No. 1 Whittall, NW cor. NE Section 29-19-1w. It made 90 bbls. a day from chat at 2,930-93 feet.

Gleason and others have erected a rig for a test at No. 1-B Hamilton, NW cor. SW SW Section 28-19-1w. Helmerick and Payne swabbed 18 bbls. of oil in 12 hours from No. 2 Russell, NE cor. Section 23-19-2w, and was waiting after treating with acid. It was producing from the Viola lime at 3,381-90 feet. Stanolind Oil & Gas Co. and others were drilling at 890 feet in No. 5 Lovett, SE cor. SW SW Section 13-19-2w. Shell Petroleum Corp. was drilling at 2,270 feet in No. 6 Meyers "B," SW cor. SE Section 14-19-2w. Carey and others were rigging up an old well to drill deeper No. 1 Smith, C NE SW Section 15-19-2w, old total depth 2,970 feet. Mid-Kansas Oil & Gas Co. has rig up for No. 3 Bridgens, SW cor. NE SW Section 2-20-3w. Turman Oil Co. was drilling at 1,650 feet on No. 2 Bridgens, NW cor. SE SW Section 2-20-3w.

Slick, Pryor & Lockhart made a location for a wildcat test at No. 1 Ordineal, SE cor. SW SE Section 21-20-3w. Marilean Oil & Gas Co. is deepening No. 4 Munn, SE cor. SE SW Section 6-20-1w, old total depth 2,983 feet, and was drilling at 3,150 feet. Regina Oil & Gas Co. and others were digging cellar for No. 2 Vogts, C NE SE Section 8-20-1w.

Rice County

Mid-Kansas Oil & Gas Co. got a hole full of oil in No. 2 Proffitt, SW cor. NW N Section 5-20-9w, Rice County, in the Siliceous lime at 3,2-31-37 feet.

Gypsy Oil Co. treated an old producing well with acid and it is now pumping 350 bbls. a day. The well was No. 1 Steckel, C NE NW Section 31-19-10w. The production was found in Siliceous lime at 3,299-3,330 feet.

Slick, Pryor and Lockhart were fishing for tools in No. 2 Orth, SW cor. SE NE Section 27-18-10w. It was showing oil from conglomerate at 3,255-62 feet.

Atlantic Oil Producing Co. was spudding No. 1 Schmidt, 660 feet south and 440 feet west of NE cor. SE Section 10-19-10w.

On the Chase townsite, Ramsey and others' No. 1 McFarland, SW cor. NE SE Section 31-19-9w, swabbed 20 bbls. of oil in five hours from Siliceous lime at 3,226-38 feet, and it was treated with acid.

Harvey County

In the Hollow district, Harvey County, the Texas Co. completed No. 1 Schroeder, NW cor. SW NE Section 4-22-3w. It pumped 700 bbls. of oil in 24 hours from Hunton lime at 3,528-37 feet. The company also completed No. 3 Andrees, NW cor. SW Section 8-22-3w, for 147 bbls. a day on the pump. It was treated with acid in the Hunton lime at 3,445-76 feet.

J. H. Mabee and Shell Petroleum Corp.'s No. 3 Martens, C NW NE SE Section 19-22-3w, made 1,691 bbls. a day on the pump, producing from Hunton lime at 3,439-63 feet. It was completed.

Magnolia Petroleum Co. has completed No. 4 Schmidt, SW cor. NW NE Section 30-22-3w, for 955 bbls. a day from the Hunton lime at 3,355-76 feet. It was treated with acid.

Mid-Kansas Oil & Gas Co. completed No. 1 Klassen, NE cor. NW Section 30-22-3w, for 1,525 bbls. a day from Wilcox sand at 3,488-3,529 feet. Same company completed No. 2 Klassen, SE cor. NE NW Section 30-22-3w, for 1,077 bbls. a day from the Wilcox sand at 3,501-35 feet. Same company has made a location for No. 8 Duerkson, NE cor. SW NE Section 19-22-3w.

Stafford County

Atlantic Oil Producing Co. abandoned its wildcat test in Stafford County, No. 1 Willinger, C NE NE Section 18-22-11w. It found the Siliceous lime at 3,693 feet and water at 3,750-52 feet.

Stanolind Oil & Gas Co. has made a location for No. 3 Allen, SE cor. NW SW Section 31-22-11w, Stafford County.

In the Gates Pool, Atlantic Oil Producing Co. was drilling at 1,080 feet in its No. 1 Gates "B," C SW NE Section 27-21-13w. Magnolia Petroleum Co. began drilling last week and was reported at 1,100 feet in its No. 1 Tucker, C SE SE NW Section 27-21-13w.

Butler County

George Bruce and Empire Oil & Refining Co. were pumping 5 bbls. a day from No. 1 Miller, C SE NE Section 10-28-4, Butler County. It was also making 100 bbls. of water. The produc-

Wildcat Operations in Kansas

Week Ending January 27, 1934
(Descriptions are East unless marked otherwise)

Company, farm and location—	Remarks:
BARTON COUNTY	
Gypsy Oil Co.'s No. 1 Soderstrom, SE NE NW Sec. 21-17-12w	Drlg. 3,403 ft.
Skelton et al's No. 1 Ott, C SE SE Sec. 16-19-14w	Acidized; 2,600 ft. of fluid in hole; S.D.
BUTLER COUNTY	
DeGenther et al's No. 1 Marnane, NW cor. Sec. 29-26-3	Cellar.
COWLEY COUNTY	
Yarnell et al's No. 1-A Speer, SE NE NE Sec. 31-33-6e	U.R. 6-in. csg.; T.D. 3,310 ft.
Van Meter et al's No. 1 Moore, NE cor. Sec. 5-35-4	Rig.
EDWARDS COUNTY	
Atlantic Oil Prod. Co.'s No. 1 Bradbridge, C SE NW Sec. 1-24-16w	In granite 4,478-4,500 ft.; abd.
ELLIS COUNTY	
Ashby et al's No. 1 Polycyn, NE SE Sec. 12-13-16w (O.W.D.D.)	To acidize 3,118-22 ft.; C.O.
ELK COUNTY	
Lerke et al's No. 1 Macon, C NE NE Sec. 5-31-10	Machine.
FINNEY COUNTY	
National Ref. Co. et al's No. 1 Smith, C SE SW Sec. 1-22-29w	T.D. 3,323 ft.; fishing.
GREENWOOD COUNTY	
DeGenther et al's No. 1 Garrison, NW NE NW Sec. 20-25-11	Drlg. 825 ft.
HARVEY COUNTY	
Hartman et al's No. 1 Jones, C NW SW Sec. 19-25-1w	T.D. 2,940 ft.; set 6-in. csg. at 2,904 ft.; P.B. to 2,924 ft.
McPHERSON COUNTY	
Slick, Pryor & Lockhart's No. 1 Ardineal, SE SW SE Sec. 21-20-3w	Moving in material.
Phillips Pet. Co.'s No. 1 Finley, C SW SE Sec. 5-2-1w	Rigging.
Dieter et al's No. 1 Carlson, SE cor. Sec. 4-19-3w	S.D. 3,400 ft.
Jim Mattson's No. 1 Boesker, SE NW Sec. 29-20-1w	Spudded.
Harris & Haun's No. 1 Rupp, SW cor. Sec. 12-21-3w	Drlg. 2,678 ft.
Wakefield & Hawkins' No. 1 Smith, SW SE Sec. 17-17-1w	Drlg. 1,250 ft.
PHILLIPS COUNTY	
Ashby et al's No. 1 Unknown, C SE Sec. 24-5-18w	Spud; S.D.
RENO COUNTY	
Stanolind and Amerada's No. 1 Hilger, SE NW Sec. 16-26-4w	Rig.
Roth & Faurot's No. 1 Yoder, C NW NW Sec. 15-24-5w	Drlg. 3,775 ft.
RICE COUNTY	
Slick, Pryor & Lockhart's No. 1 Schmidt, C NW NW Sec. 15-18-10w	Drlg. 1,400 ft.
El Dorado Ref. Co.'s No. 1 Wernet, SW NE Sec. 12-20-6w	Drlg. 2,988 ft.
Larie O. & G. Co. and Elwell's No. 1 Russell, NE SW Sec. 29-23-7w	Drlg. 2,975 ft.
Geo. Dickey et al's No. 1 Hunter, NE cor. Sec. 35-19-7w	Drlg. 750 ft.
Langston et al's No. 1 Markle, NE SW Sec. 1-20-8w	T.D. 1,057 ft.
ROOKS COUNTY	
Phillips Pet. Co.'s No. 1 Dopitz, C SW SW Sec. 31-8-17w	Rig.
RUSSELL COUNTY	
Western Exploration Co.'s No. 1 Andrea, SW cor. Sec. 30-15-12w	Drlg. 850 ft.
Tom Palmer's No. 1 Steinle, NW SW Sec. 22-13-14w	Drlg. 2,860 ft.
SEDGWICK COUNTY	
Cameron et al's No. 1-A Funk, SW SE NW Sec. 6-26-2e	Drlg. 2,870 ft.
Wentz et al's No. 1 Stockamr, SW NE Sec. 31-26-2w	Drlg. 3,804 ft.
STAFFORD COUNTY	
Atlantic Oil Prod. Co.'s No. 1 Willinger, C NE NE Sec. 18-22-11w	Drlg. Siliceous lime 3,693-3,752 ft.; wtr.
Vickers Pet. Co. and Phillips Pet. Co.'s No. 1 Cravens, SW NE Sec. 15-25-11w	Drlg. 2,220 ft.
SUMNER COUNTY	
Wentz and Continental Oil Co.'s No. 1 Kerns, SE cor. NE Sec. 6-34-1w	Location.
WOODSON COUNTY	
Sheedy et al's No. 1 Warner, NE SW SW Sec. 21-25-14	S.D. 1,000 ft.
Wolf Creek Oil Co.'s No. 1 Larber, NW cor. Sec. 35-25-14	Drlg. 455 ft.
Lewis Bros.' No. 1 Riggs, SW cor. Sec. 10-26-14	Set pipe at 765 ft.; S.D.

tion was found in the Kansas City-Lansing lime at 2,091-2,128 feet.

Edwards County

Atlantic Oil Producing Co. abandoned its test in Edwards County at a total depth of 4,500 feet. The test was No. 1 Bradbridge, C SE NW Section 1-24-16w. It found a showing of gas at 4,125 feet.

Barton County

Stanolind Oil & Gas Co. had a showing of oil in the Siliceous lime at 3,290-95 feet in No. 2 Gerlof, C NW NW Section 16-20-11w, Barton County. It swabbed 150 bbls. of oil in 24 hours at a total depth of 3,318 feet.

Greenwood County

Ward McGinnis and others have a 50-bbl. well in No. 1-A Prather, NE cor. NW SE Section 15-25-11, Greenwood County. Production was found in sand at 1,670-83 feet.

Henderson, Holden and others' No. 2 Smith, SE cor. NW NE Section 6-24-12, was abandoned at a total depth of 1,847 feet.

Markus & Gore and others have moved in a machine for their No. 1 Morris, SW cor. NW Section 5-24-12. Matthews and Rex were drilling at 675 feet in their No. 4 Wilson, NE cor. SW Section 8-24-12.

Russell County

Stanolind Oil & Gas Co. has staked a location for No. 16 Austin, SE cor. NW SW Section 30-12-15w, Russell County.

Woodson County

Wolf Creek Oil Co. was drilling at 460 feet in No. 1 Lauber, NW cor. Section 35-25-14, Woodson County.

Sedgwick County

Gypsy Oil Co. has a 382-bbl. well in No. 10 Hamant, SW cor. NE NW Section 14-26-2, Sedgwick County. The well is producing from the Viola lime at 3,158-66 feet.

United Petroleum Co. was drilling at 1,000 feet in No. 1-A Buck, 840 feet north and 1,000 feet west of SE cor. SW Section 6-26-1. Magnolia Petroleum Co. was drilling at 150 feet in its No. 8 W-K-H Trust Co., SE cor. NE NE Section 19-27-2.

Reno County

Stanolind Oil & Gas Co. and Amerada Petroleum Corp. have erected a rig for a wildcat test on No. 1 Higler, SE cor. NW Section 16-26-4w, Reno County. Olsen and Shell Petroleum Corp. were drilling at 1,160 feet in their No. 2 Roberts, C SW NW Section 25-23-4w. Manning & Terry were erecting a rig for No. 1 Bartil, 340 feet north and 209 feet west of SE cor. SW Section 36-22-4w.

Coffey County

Hinze and others' No. 2 Vanocker, NE cor. SW SE Section 12-23-14, Coffey County, was completed for 5 bbls. on the pump after treating with acid.

Elk County

Central States Oil Co. completed No. 1 Hull, C N half NE SE Section 26-31-10, Elk County. It produced 500,000 feet of gas initially from a total depth of 1,998 feet. Lerke and others have staked a test, No. 1 Mason, in C NE NE Section 5-31-10.

Cowley County

A. D. Crow completed a gas well, No. 1 Moffitt, NW cor. SW NW Section 10-32-5, Cowley County. The well made 500,000 feet of gas a day from sand at 726-42 feet.

PATENT SUIT

Suit was filed on January 18 in eastern district of Oklahoma Federal court, Muskogee, Okla., by Dow Chemical Co., of Midland, Mich., against the Chemical Process Co. of Breckenridge, Tex., alleging infringment of the Grebe and Sanford patent No. 1,877,504 issued under date of September 13, 1932, and assigned to Dow Chemical Co. Date for the hearing has not been announced. Arthur C. Brown, attorney, Kansas City, Mo., represents the plaintiff.

Oil Companies Co-operate With Expo on Marketing

"The scope of petroleum marketing activities has widened so greatly during the past three years that the exhibits in the Marketers and Refiners Building at the International Petroleum Exposition and Congress to be held in Tulsa May 12 to 19 will be a revelation to jobbers and oil men interested in this phase of the industry," William B. Way, general manager, says, adding that 68 per cent of the space available in the special building for Marketers and Refiners has already been contracted for.

"The building which was completed for the show held in 1930," Mr. Way explains, "has 66 booths, which will contain exhibits of equipment manufacturers whose products are used in the distribution of petroleum products and by refining companies. Dealers and jobbers in petroleum products will see on display all marketable products of petroleum and gas; the latest developments in their line within a single building. They will be amazed at the many new practices, policies, new merchandise and equipment which will be paraded before their eyes in one place.

"Oil companies are co-operating with the exposition in advertising the marketing and refining exhibits by helping to distribute thousands of pieces of literature. More than a hundred thousand pieces will be sent to independent jobbers. Much mail matter will be sent out and placards will be placed by companies throughout their trade territories.

"Large companies which will have marketing and refining exhibits are Sinclair-Prairie, Texas Co., Mid-Continent Petroleum, Deep Rock, Sun Oil, Marathon, Phillips Petroleum and Skelly.

"Contracts have also been signed for space in the building by Advertising Novelties Co., Tulsa; Aluminum Co. of America, Pittsburgh, Pa.; Compton & Sons, St. Louis; Dover Stamping & Manufacturing Co., Cambridge, Mass.; Erie Meter Systems, Erie, Pa.; Goodrich Electric Co., Chicago; Kemper Thomas Co., Cincinnati; Key Boiler Equipment Co., St. Louis; Maloney Tank Manufacturing Co., Tulsa; Multi-Metal Wire Cloth Co., New York; North American Car Corp., Tulsa; Palm Brothers Decalcomania Co., Chicago; Tulsa Canvas Products Co., Tulsa; Viking Pump Co., Cedar Falls, Iowa; Vol-U-Meter Co., Buffalo, N. Y.; Wackman Welded Ware Co., St. Louis; Wilson & Bennett Manufacturing Co., Chicago."

Iraq Pipe Line Contains Around 200,000 Welds

Recent cable dispatches announce completion of the laying and welding of the Iraq pipe line. Twelve hundred miles of pipe were joined by the shielded arc welding process. An international aspect to the actual construction was given by the four expert welding crews composed principally of Americans and a small number of British, French and native operators. Each crew was assisted by approximately 300 native helpers. Approximately 12,000 men were employed in the construction of the line.

Equipment used in the construction was furnished principally by American manufacturers. Welding machines and all of the electrodes used were manufactured by the Lincoln Electric Co., of Cleveland, Ohio. Especially designed motor lorries were built for transportation of pipe and equipment. Actual laying of the line and all welding was completed in 13 months. Approximately 200,000 welds are contained in the 1,200 miles of line.

J. W. WHITLOCK DIES

PETROLIA, Ontario, Jan. 27.—John William Whitlock, aged 60, died here on January 22 after several years' illness. Mr. Whitlock came to Petrolia 41 years ago, and was for some time employed in the oil industry. A widow, two daughters and two sons survive.

INTERNATIONAL PETROLEUM

TORONTO, Ontario, Jan. 27.—A review of the 1933 operations of the International Petroleum Co. in South America indicates, for the Peruvian field, an estimated production of 11,027,000 bbls. During the year the contract under which International Petroleum Co. purchased the output of the Lobitos Oil Co. was cancelled, the latter company establishing its own distributing system in England and commencing the building of a refinery. As a result, International Petroleum Co. increased its own production.

Lobitos Oil Co. production amounted to around 1,968,000 bbls. The Zoritos company had a small production for 1933, which would bring the total production for the Peruvian field last year to 13,300,000 bbls. With this total Peru ranks ninth among the world's oil producing countries, and ahead of Colombia.

JACOB KOHLER DIES

CAYUGA, Ontario, Jan. 27.—Jacob Kohler, Sr., died at Niagara Falls, Ontario, last week in his seventy-fourth year. Mr. Kohler was interested, with his brother, the late Chris. Kohler, in natural gas development.

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First Well in Eagle Hill Pool to Get Production in a Lower Sand Than the Cole Formation

By B. D. STEVENSON
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Jan. 29.—The Texas Co. got gas and oil in a Government Wells sand at 2,131-37 feet on the west side of the Eagle Hill Pool in northern Duval County and tested salt water at 2,354-66 feet in its No. 1 Rodriquez, semi-wildcat 3 miles northeast of the North Government Wells Pool. This and the abandonment of O. W. Killam's No. 3-A Wood-Welder in the district north of the North Government Wells Pool tells the bulk of the story as to that district.

Heavy rains over most of Southwest Texas the past week slowed down work and many tests were out of fuel and made no progress. The week saw the announcement of a number of new and interesting wildcats over the country.

The test most watched lately in northern Duval County was Texas Co.'s No. 7-A Duval County Ranch Co., a 660-foot west offset to a Cole sand producer at 1,500 feet. It got gas in the Cole sand and went down to the Government Wells horizon and took in 6 feet of sand at 2,131-37 feet that tested 300 pounds and 5 joints of oil in about eight minutes and set casing. After drilling the plugs it was brought in and made considerable of a gas well and some oil. As has been reported there is more than one sand classed as Government Wells and geologists find it difficult at times to identify particular sands. Some authorities were expecting that the best production in Government Wells sand, if found productive in this test, would be a little deeper and at around 2,170 feet.

The well is important in that it is the first in the Eagle Hill district to go to a lower sand than the Cole and in the upper few feet has some production. This district is about 3 miles due north of the nearest production in the North Government Wells sand and the northernmost producers in the North Government Wells Pool are producing at around 2,300 feet and below. Magnolia Petroleum Co.'s No. 15 Duval County Ranch Co., 1,650 feet from the south line and 2,310 feet from the east line of Survey 208, completed the past week and the farthest north producer in the North Government Wells Pool, got the sand at 2,307-31 feet and came in for 150 bbls. of oil and 5,000,000 feet of gas daily. Texas Co.'s No. 7-A D.C.R.C., being 3 miles north, would naturally get the same sand a little higher, but it seems probable it may be in a higher sand than Magnolia's No. 15. At any rate, Texas Co.'s No. 7-A is causing operators to keep a close watch on that district on account it may furnish another Government Wells pool.

Ignacio Pool

Texas Co.'s No. 1 Rodriguez in Survey 212 was a disappointment in sand at 2,354-63 feet, probably a Government Wells sand, possibly a stray sand. It is one-half mile east of two wells of DeSoto Oil Co. on the Wood-Welder in Survey 211, one of them a gas well and the other a 20-bbl. oil well at about 2,165 feet, the only two producers constituting the Ignacio Pool and 2 miles north and 1½ miles east of the North Government Wells Pool. No. 1 Rodriguez is drilling ahead.

O. W. Killam's No. 3-A Wood-Welder, half way between the DeSoto wells of the Ignacio Pool and the Eagle Hill Pool, has been abandoned at 2,369 feet. It had a sand at 2,360 feet that looked good for a time. It was found in No. 3 but the hole was lost, resulting in the drilling of No. 3-A 100 feet away. This abandonment leaves the district vacant as to tests drilling between the two fields.

In the wildcat territory north of Government Wells in McMullen County very little progress was made on account of rain and none of the wildcats reported anything of interest.

Jim Wells County

In Jim Wells County another wildcat has been announced north of the Seeligson district where there are now two wells producing at different depths. Rodney DeLange made location for No. 1 Driscoll approximately 3 miles due north of Magnolia's No. 2 Seeligson, standing shut down at 3,250 feet. An extension was obtained from the landowners last May granting permission to close in the well for a year. It was reported at the time good for 100 bbls. or more and produced considerable oil in storage on the lease.

Trinity Drillers' No. 1 Seeligson, producing at around 2,366 feet, is 1½ miles south of Magnolia. DeLange's location is 330 feet from the south line of the Driscoll land in the Los Jaboncillos grant and is approximately 1½ miles east of the west line of that grant.

Fifteen miles northeast of Rodney DeLange and 3 miles northeast of Ben Bolt, another test is to be drilled a half mile northwest of the old Doerring farm tests drilled several years ago, and another 25 miles northeast at Sandia, Walter H. Bode is arranging to drill a test on the Spurgeon & McCarley tract of 300 acres. The test northeast of Ben Bolt will be drilled by Robertson of Fort Worth.

Western Nueces County

Coquat has the contract to drill another well to the 4,800-foot sand east of the 2,000-foot Agua Dulce gas field in western Nueces County for Garland Clymore and it will be Clymore's second. It will be on the Ollie Purl land in the center of the south 20 acres of the east half of the northeast quarter of Section 7. Sullivan, who has abandoned his No. 1 McCoy 3 miles south of the field, is moving 2½ miles east and will drill in the southwest corner of the Simmons & Perry tract in the Fred Elliff Survey.

San Patricio-Refugio

Activity is still reported in southern Refugio County in the Bonnieview district and the adjoining northern part of San Patricio County. Holland Oil Co.'s No. 1 Peck in the Bonnieview district below 4,000 feet is the only active wildcat there, though the recently abandoned tests of the Texas Co., C. B. Bunte, Inc., and Atkins & O'Neill seem to indicate a pronounced structure. South of the river Heep has abandoned his No. 1 Welder at 6,000 feet and Plymouth Oil Co. is moving in to drill its No. 1 Welder in the same territory near Sinton. There are reports of considerable lease inquiry in that district around Sinton.

Two spots are to be watched in the lower end of the Laredo district. Jeffries-Lambeth Drilling Co., which brought in No. 1 Starr County Cattle Co. six months ago as a gas well at 2,450-55 feet in pure wildcat territory 9 miles northeast of Rio Grande City in Starr County, is starting the No. 2, located a little east of No. 1. It is its first test since they brought in the gas well and is located to be down the dip a little and get oil and miss the gas.

About 2 miles northwest of the gas well Goodwin & Yantis have started the beginnings of another shallow pool at about 700 feet, as reported last week. The shallow tests are close enough to the gasser to have some bearing possibly on the geology of the area.

The other spot is in southwestern Hidalgo County where Chancellor & Hall's No. 1 Garcia has been holding attention for some time, though it tested salt water finally. The showing in the core is enough to keep operators working on the district. D. D. Oil Co. (Davenport) has undertaken to deepen the Daskom Brothers well, 2 miles east of the Chancellor & Hall, which has been standing at 4,400 feet, and Weekly & McGinley, who took over the Chancellor & Hall at 3,187 feet when it got into litigation, are starting the No. 1 Guerra 1,600 feet to the west.

Balcones Fault Zone

There is prospect of another deep Edwards lime test on the Tanglewood fault in northern Lee County, where Paton Brothers drilled the past year and got a little showing of oil but failed to make a well. Humble has done much work in that territory in research and has considerable acreage.

Amerada Petroleum Corp.'s No. 1 Doerring, in southwestern Frio County, announced recently as out of the woods on a fishing job that held it up at 6,064 feet for a long time, got back into practically the same trouble and is trying

(Continued on Page 58)

Wildcat Operations in Southwest Texas

Week Ending January 27, 1934

Company, well, farm name, section and block—	Remarks:
BASTROP COUNTY	
Humble O. & R. Co.'s No. 1 Ollie Carter, 951 ft. SW from NE cor. and 330 ft. NW from SE line of 117.36-ac. tract near Elgin	Derrick.
Don B Megahan's No. 1 Charles Holcomb, 350 ft. NW of NW line of W. P. Watts' 75.5-ac. tract, and 400 ft. NE of SW line of John W. Bunton Sur.	Building derrick.
Sun Oil Co.'s No. 1 Page-Probst, 330 ft. from E line, 330 ft. from S line of 103-ac. tract in Andrew Mays Sur.	T.D. 1,635 ft.; drlg.
BELL COUNTY	
Gus Winston et al's No. 1 Warrick, 100 ft. N of James Scroggins' No. 1 Warrick, in Elijah Ingram Sur.	T.D. 2,050 ft.; standing.
BEXAR COUNTY	
C. I. Albertson's No. 2 C. Hoke estate, 675 ft. from E line, 350 ft. N of Medina River in Jose Maria Barrera Sur.	T.D. 1,135 ft.; abd.
A. M. Blume's No. 2 Louis Ridder, approximately 2,350 ft. N of R.R., and 700 ft. E of W line of J. M. Baerera Sur. No. 58	Location only.
Cosby et al's No. 1 Ruiz, SE cor. of 82-ac. tract in F. Rowland Sur. No. 46	T.D. 1,360 ft.; coring.
S. W. Forrester's No. 1 Appelt, 160 ft. E of Corpus Christi Road, 1,666 ft. S of N line of tract in M. Urregias Sur.	T.D. 1,335 ft.; drlg. in Buda lime.
Thos. Gorton's No. 1 Edward Jackel, 600 ft. from N line, 800 ft. from E line of tract in J. Ward Sur.	T.D. 100 ft.; rigging up rotary.
George L. O'Neill's No. 1 Neimann in Juan Montez Sur. No. 6	T.D. 1,055 ft.; standing.
J. W. Johnson's No. 1 Willow Springs, 150 ft. from N and W lines of lease in B. Munos Sur. No. 151	T.D. 2,021 ft.; P.B. to 1,900 ft.; drlg. out cmt.
Fred A. Perrenot's No. 1 Russell, 750 varas from NE line, 64 varas from NW line of 500-ac. tract in Rodriquez Sur.	T.D. 1,315 ft.; standing.
N. H. Price's No. 1 Barragas, 150 ft. from S and E lines of 60-ac. tract	T.D. 419 ft.; S.D.
N. S. Powell's No. 1 M. Sanner, 400 ft. from E line, 5,280 ft. from N line of 128-ac. tract in Ruiz Sur. No. 47	T.D. 135 ft.; standing.
C. A. Smith's No. 1 Henry Lamb, 750 ft. from N and E lines of Lamb farm, in de la Garza grant	T.D. 850 ft.; standing.
W. L. Umburn's No. 1 Otto Jackel, 150 ft. from S and E lines of Jackel 391-ac. tract in Samuel McCulloch Sur. No. 54	T.D. 890 ft.; dry and abd.
BLANCO COUNTY	
Blanco Development Co.'s (McGee) No. 1 A. J. Dittmar, 1,320 ft. from S line, 150 ft. from W line of George Evans Sur. No. 58, 4 miles NW of Johnson City	T.D. 1,305 ft.; P.B. to 1,050 ft.
Rogers et al's (formerly Pedernales Pet. Corp.) No. 1 Lester, 550 ft. from N line, 6,100 ft. from W line of Antonio Bendrand Sur.	T.D. 1,200 ft.; drlg.
CALDWELL COUNTY	
S. S. Cargill's No. 2 Damereau, 150 ft. from W line, 450 ft. from N line of D. Cooper Sur.	Location.
Whitfield et al's No. 1 Wilms, 160 ft. from S line, 3,100 ft. from E line of 165-ac. tract in Cornelius Grenshaw Sur.	T.D. 958 ft.; drlg.
COMAL COUNTY	
Theo. Hicks et al's No. 1 Gruene, 435 ft. from NE line, 414 ft. from NW line of H. Foster Sur. No. 34, 3 mi. NE from New Braunfels	Spudded and standing.
DEWITT COUNTY	
Humble O. & R. Co.'s No. 1 Kuester, 4,100 ft. from N line, 466 ft. from E line of lease in S.A.&M.G. R.R. Sur. No. 7	Moving in derrick.
DUVAL COUNTY	
Buffalo-Texas Drlg. Synd., Inc.'s No. 1 Escobar, 700 varas from W line, 1,000 varas from N line of 930-ac. tract in Francisco grant	Derrick.
Eaton et al's No. 1 Herbst, 1,650 ft. from E line, 330 ft. from S line in S.A.&M.G. Sur. No. 71	T.D. 3,080 ft.; coring in sand.
O. W. Killam's No. 3-A Wood-Welder, 100 ft. N of No. 3, 6,223 ft. from S line and 200 ft. from W line of Sur. No. 102	T.D. 2,369 ft.; abd.

(Continued on Page 61)

Lloydminster Gas Well May Produce Enough to Supply Town's Needs

BY VICTOR LAURISTON
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Jan. 27.—Further details of the recently reported gas strike in western Saskatchewan north of Lloydminster indicate that Lloydminster Gas Co.'s No. 1 has a fair commercial production at around 1,400 feet. The drill passed through four smaller shows of gas in the last 150 feet, before encountering the present larger flow. A 24-hour test conducted under the supervision of the supervisor of mines for Saskatchewan gauged 350 pounds rock pressure. Early reports indicated a probable flow as high as 1,000,000 feet a day. The location is in LSD 6, Section 11-50-28w3, approximately 1 mile north of Lloydminster. The company, financed largely by local capital, is planning to deepen to 1,800 or 2,000 feet, the main producing horizon on the Alberta end of the Ribstone-Blackfoot structure, at which depth a larger production is looked for. The drillers were Charles Mills, Messenger and Wilson, and the test, spudded in November 22, got the present gas sand in 48 days, though some time was lost in December owing to severe cold weather and there were also some halts for casing and repairs.

It is estimated that the present producting horizon will yield sufficient gas to supply the town of Lloydminster, and it is expected arrangements will be made to pipe the gas to the town and lay a distributing system this year. The company's office is at Lloydminster and the officers are: President, H. Rumble; vice president, F. H. Dunstan; secretary-treasurer, James W. Brockhurst.

Two Tests in Lime

In the South Turner Valley, two tests in Section 28-18-2w5, are in the lime. Mar Jon Oil Co.'s No. 2 Kindersley, LSD 10, encountered the Madison at approximately 4,918 feet, and has cemented casing in the lime at 4,965 feet. The test will start drilling into production next week. The test got the lime about 162 feet higher than Becker Syndicate's No. 2 Anaconda in LSD 15, and has logged higher than the other tests in this section, so that a large producer is anticipated when the porous horizon is reached. Becker Syndicate's No. 2 Anaconda, LSD 15, is drilling more than 320 feet in the lime with a fair wet gas production and is reported entering a porous zone.

In Section 28-18-2w5, Pacalta Oils' No. 1, LSD 7, is drilling and carrying casing below 3,700 feet. Director Oils' No. 1, LSD 16, same section, has derrick up. Spooner Oils' No. 5 Anaconda, is drilling below 3,240 feet and logging satisfactorily.

Century Royalties' No. 1, LSD 14, same section, has steel derrick up and rotary equipment on ground. Hilary Head with the rotary crew who recently completed Sterling Royalties' No. 1 producer will handle the drilling, and the test is expected to spud in early in February. The test is toward the west side of the structure, but in line with other producers.

South Turner Valley

On the western edge of the Mercury tract, Associated Royalties' No. 1 Spray, LSD 9, Section 5-19-2w5, has resumed drilling from 3,250 feet after a delay due to water shortage. On the east side, Northwest Co.'s No. 1 Calgary & Edmonton-Longview, LSD 5, Section 27-18-2w5, is drilling below 3,849 feet, still in the Benton shale formation, indicating the lime is pretty deep this far east.

In the far south end of the field, Highwood-Sarcee Oils' No. 1, LSD 16, Section 21-18-2w5, is drilling below 4,075 feet after passing through the Kootenay coal seam marker between 3,952 and 3,960 feet.

Tests in the Foothills

On the Rickert structure west of the South Turner Valley Field, Paramount Oils' No. 1, LSD 2, Section 28-18-4w5, is unofficially reported down 3,751 feet, 10 feet in the lime. Some months ago the test was reported to have the lime at around 3,400 feet, and it is not certain whether the present lime represents faulting or the first occurrence was actually one of the overlying formations. The location is about 12 miles west of the village of Turner Valley on fold geologized by Julius Rickert. Some small oil shows have been reported in this test, which has been drilling intermittently for several years.

Border Fields

On the Alberta end of the international Reserve Dome structure, Rialto Oils' No. 1, LSD 4, Section 15-1-9w4, is below 2,890 feet after setting 8-inch casing at 2,665 feet.

Wainwright Field

Plans for the systematic development of the Wainwright Field in east central Alberta are being formulated by Gold Standard Oils, Ltd., backed by the W. H. Wright mining interests of Toronto. The east central Alberta area, unlike Turner Valley and the wildcat operations in the Alberta foothills belt, is a comparatively shallow drilling proposition, oil and gas horizons being encountered between 1,800 and 2,300 feet. Upwards of 23 wells have been drilled in this area, all proving productive though three have been abandoned; the gas sand being between 2,100 and 2,200 feet. The field is located largely in Townships 48 and 49, Ranges 12 and 13w4.

Ontario Drilling

In the Dover Field, Kent County, Ontario, Ajax Oil & Gas Co.'s No. 7, Antaya farm, SE Lot 1, Concession 4, Dover East Township, was shot in the Trenton where a small gas flow, around 80,000 feet, was met at 3,181 feet. Through some mischance several of the bottom lengths of casing were wrecked, following which 25 feet of salt above the bottom caved into the hole. At last reports the drillers were working to clear the hole and pull the damaged casing. In the same field, Prairie Oil & Gas Co.'s No. 2 Stephens farm, Lot 2, front concession, is standing at 1,035 feet.

In the Dawn Field, Lambton County, Union Gas Co.'s No. 71, NW E half Lot 23, Concession 2, Dawn Township, is moving in equipment. Union's No. 72, SE Lot 23, Concession 13, Dawn, is also moving in equipment. Kiser Brothers of Chatham are handling the contracts.

In Moore Township, Lambton County, S. S. Reesman Syndicate's No. 1 Kerr farm, Lot 21, Concession 1, Moore Township, landed the 12½-inch drive pipe at 165 feet after passing through some 40 feet of gravel. The 10-inch is being driven at around 190 feet and is expected to get the rock at about 200 feet.

Canadian Petroleum Production

Official figures show that the crude petroleum production from all Canadian fields in November totaled 108,304 bbls. compared with 107,045 bbls. in October and 77,107 bbls. in November, 1932. For the 11-month period of 1933 the total was 1,044,061 bbls. compared with 973,532 bbls. in the 1932 period.

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California Is Organizing Oil Trade Association; State Taking Steps to Stop Waste of Gas

By L. P. STOCKMAN
Staff Correspondent, California Fields

LOS ANGELES, Calif., Jan. 29.—A group of California producers and refiners has called a general meeting in the Biltmore Hotel, Los Angeles, February 5, to consider the advisability of organizing a state trade association in order that the various interests might be brought together. At a previous meeting representatives elected a committee to proceed with preliminary organization, consisting of Hooper C. Dunbar, chairman; Angus Crites, vice chairman; Rush M. Blodget, executive secretary, and Robert M. Pease, Thomas W. McManus, C. A. Johnson, V. R. G. Wilbur, and H. A. Bardeen.

Chairman Dunbar communicated with Wilson Compton, NRA chief of trade associations, who informed the California committee that "public protection, and not the particular formula by which it is secured, is an important consideration. The Sherman Act, though sound in purpose and principle, was inflexible in application and inconsiderate of changing competitive conditions in a world of economic change. In many respects and in many industries the act had become a destroyer of public interests which it was intended to protect. Trade associations must develop reasonable facilities for fact finding, investigations, inspections, audits, education of members, provision for adjustment and arbitration of complaints, adjudication of appeals, standard methods of classifications of cost accounting, and methods and forms of statistical report. The activities of code government into which industrial organizations have been suddenly plunged include legislative, executive and judicial functions."

If the general assembly of operators scheduled February 5 approves the plan to organize a state trade association, the new organization will probably be merged with the California Oil and Gas Association and the Oil Producers Sales Agency of California.

Tax Statutes

A resolution was adopted early in the week by a joint meeting of representatives of every state-wide oil organization protesting against proposals now being considered by the House Ways and Means Committee. A telegram was sent to California senators and congressmen signed by the Independent Oil Producers' Agency, Independent Petroleum Association of California, Oil Producers Sales Agency of California, California Oil and Gas Association and the Pacific Coast Petroleum Industries Committee, urging "that you use your best efforts to defeat proposals now before Ways and Means Committee to eliminate or reduce allowances to natural resource industries for depletion and depreciation. Tax statutes covering oil production are known and understood and further instability will be created by proposed changes which will seriously affect all labor interests, landowners, allied and interdependent industries. Proposed changes will cause a repetition of the chaos which existed in administering these provisions in the Revenue Acts of 1913 and 1916."

R. D. Bush, state oil and gas supervisor, late in the week notified Huntington Beach operators that unless they take immediate steps to prevent unreasonable waste of gas they will be enjoined from operating. The action of the supervisor was taken at the suggestion of D. H. Blood, state director of natural resources, who said he had been informed an investigation disclosed that approximately 40,000,000 feet of gas produced daily from tideland wells in the Huntington Beach Field is being blown to the air. Gas waste in the Huntington Beach town lot area has been a matter of concern for several weeks and was brought into the limelight when Claude C. Brown, gas administrator of California, reported to the Railroad Commission that 57 per cent of the gas resources of the town lot area was being wasted. The wastage at Huntington Beach is approximately five times that of the Kettleman Hills Field, where 8,000,000 feet out of a total daily production of 340,000,000 feet is being blown into the air. At Huntington Beach, approximately 40,000,000 feet out of a total production of 70,000,000 feet is being blown into the air. If operators in the town lot area do not immediately effect substantial reductions in gas waste it is the present intention of the state oil and gas supervisor to institute action in the Superior Court at Santa Ana to prohibit operators from violating the California gas conservation law, which prohibits both physical and underground waste. The gas conservation law has been upheld in part by the U. S. Supreme Court and will therefore carry considerable weight.

Oil Suits Continued

By stipulation of counsel, Superior Court Judge Ames postponed action on the state's suit against Wilshire Oil Co. until February 5. The stipulation to continue the case also included an agreement that the five cases already on file against Wilshire Oil Co. and its subsidiaries and all others that may be filed against it will be consolidated and tried as one case. Ambassador Petroleum Co., which also has been sued on a similar complaint, was given until January 31 to answer. Webb Shadle, attorney for the state division of lands, announced he is preparing additional cases against new defendants. Interest in the tideland litigation was enlivened when Assemblyman Craig of Orange County requested State Finance Director Rolland Vandegrift to check wells located in close proximity to the ocean to determine if they are producing from beneath the state tidelands. Vandegrift announced he would ask the Standard Oil Co. to produce drilling survey records to disprove rumors that the company had whipstocked a certain number of wells. Standard Oil Co. has informed the state finance director it would not interfere with upland operators who whipstocked through Standard property to the ocean and would approve rights-of-way for operators whose royalty agreements have been approved by the state.

Director Vandegrift appears to be overly optimistic regarding the annual and total amount of royalty payments which should accrue to the state as a result of tideland development. He anticipates an annual royalty payment of approximately $1,000,000 per year and a total of $15,000,000 before exhaustion of the tideland acumulation on the basis of a 12½ per cent royalty interest. With gas depletion already evident and the state oil and gas supervisor preparing to institute action against operators to prohibit waste of gas, it is obvious the annual return to the state treasury will be substantially below the anticipated amount. This is particularly true in the event that the state oil and gas supervisor prosecutes action on the basis of the California gas conservation law, because tideland wells will be permitted to produce only a small amount of oil in order to conserve gas resources.

Huntington Beach

Two tideland producing wells were effectively mudded off early in the week by rotary drilling fluid from a drilling well, No. 1 Towers of Petrol Corp. and the Elyod Oil Corp.'s No. 2. The former was flowing 2,250 bbls. per day and the latter 294 bbls. when mudded off. Interference between wells in the town lot area has been rather infrequent, despite the considerable meanderings of several wells. A few months ago Standard lost two producing projects when the bit from a drilling well drilled through both the water string and oil string. State officials, while somewhat divided on the subject, are expected to limit future drilling operations as far as the tidelands are concerned in order to eliminate interference by drilling wells which might easily cause serious damage to the producing horizon.

E. K. Allison's No. 1-A McClure died during the early part of the current week and it is being rigged up to put on the beam following the inability to stimulate production by swabbing operations. Standard Oil Co. is starting two new wells in the town lot area, No. 65-B and No. 21 Pacific Electric. Gray Eagle Oil Co. completed No. 1 Huntington a few days ago flowing 2,450 bbls. of 27.1 gravity oil and 2,500,000 feet of gas per day from 5,064 feet.

Lost Hills-Belridge

General Petroleum is expected to resume drilling operations on No. 1 Berry in the South Belridge Field of Kern County within a few days. It is standing with a 6⅝-inch water string landed and cemented at 9,717 feet. A week or two previous to landing the string of 6⅝-inch, the company ran in and cemented an 8⅝-inch conductor string at 7,745 feet. The 8⅝-inch was landed primarily for protective purposes to prevent the hole from caving and serve as a conductor for the 6⅝-inch. General Petroleum has taken extra precautions in drilling No. 1 Berry as it showed considerable gas pressure, and is generally expected to register substantial production. It will prove up the South Belridge Field for deep production if it is finished as a commercial producer.

Associated Oil Co. ran a formation tester in No. 1 Williamson, a deep test in the Lost Hills Field at 6,995 feet, and the result showed that at the present depth the well would flow at the rate of approximately 20,000 bbls. of salt water per day. The drilling mud was given additional weight and drilling is going ahead. The company will land another string of casing in the immediate future. Standard Oil Co. is putting the finishing touches on the rig for No. 45, a wildcat in the McKittrick district. Ohio Oil Co. has not yet encountered sufficient showings to justify a production test in its Buena Vista Lake wildcat down to the present depth, 5,098 feet, but is not in the least discouraged as deep drilling was contemplated.

Mountain View

Drilling operations have shown a consistent increase in the Mountain View Field of Kern County and if the rate continues for 60 days, this field will be the most active in the state. Hogan Petroleum Co. is making preparations to finish No. 1 Haley in Section 29-30-29 and Mohawk Petroleum Co. will probably finish No. 3 Hood about the same time. Standard Oil Co. is building rig for No. 1 Nichols a few hundred feet north of Mohawk Petroleum Co.'s No. 1 Clendennen, which was finished as an excellent producer several weeks ago. Severns Drilling Co. is building rig for No. 1 Smith and has staked location for a second well. Mohawk Petroleum, A. T. Jergins Trust and the Petrol Well Production Co. are also completing preparations to start additional work. O'Kane & Brain have acquired the Wright-Bloemer lease from the A. T. Jergins Trust and are drilling in their first well at 780 feet.

North Kettleman Oil & Gas Co. has suspended drilling operations in No. 1 Lillis-Welsh, due to inability to sidetrack and drill past the fish lost in this 10,944-foot hole last year. The company,

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	Jan 14—		Jan. 7—			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Diesel and gas oil	.....	.....	.....	.....	.....	101,759
Fuel oil	126,266	18,324	209,234	44,176	437,500	.....
Gasoline	79,764	11,395	74,451	10,636	154,215	391,631
Kerosene	.....	.....	79,620	11,374	79,620	250,130
Other finished oil	.....	.....	.....	.....	.....	15,252
Foreign exports—						
Crude oil	240,156	34,308	62,870	8,981	303,026	209,146
Fuel oil	323,485	46,212	69,484	12,783	412,969	322,990
Diesel and gas oil	143,613	20,516	12,025	1,718	155,638	128,135
Gasoline	275,823	39,403	150,208	21,458	426,031	299,672
Kerosene	24,196	3,457	37,388	5,341	61,584	62,785
Coastwise-domestic—						
Crude oil	.....	.....	.....	.....	.....	448,835
Fuel oil	271,035	38,718	237,918	33,988	508,953	459,492
Diesel and gas oil	6,727	961	.....	.....	6,727	93,551
Gasoline	322,926	46,132	239,231	34,176	562,157	580,012
Kerosene	.....	.....	.....	.....	.....	12,706

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	97,993	13,999	.....	.....	97,993	.....
Kerosene	.....	.....	.....	.....	.....	154,070
Foreign exports—						
Crude oil	.....	.....	76,255	10,894	76,255	.....
Fuel oil	18,976	2,711	60,375	8,625	79,351	67,825
Diesel and gas oil	.....	.....	795	114	795	34,569
Gasoline	14,727	2,104	63,315	9,045	78,042	139,122
Kerosene	.....	.....	10,960	1,566	10,960	27,843
Lubricants	.....	.....	14,464	2,066	14,464	2,225
Other unfinished oil	.....	.....	.....	.....	.....	4,881
Coastwise-domestic—						
Fuel oil	82,593	11,799	.....	.....	82,593	56,387
Diesel and gas oil	12,723	1,818	12,876	1,839	25,599	12,973
Gasoline	112,482	16,069	14,931	2,133	127,413	91,551
Kerosene	7,317	1,045	.....	.....	7,317	6,746

since resuming operations in December, 1933, had succeeded in redrilling the hole to 10,345 feet, at which point the original fish slipped back into the hole. The Standard Oil Co. and Kettleman North Dome Association have both started preparations to undertake additional drilling in the Kettleman North Dome Field and it appears probable this field will continue to be rather active during 1934. Union Oil Co. is building rig for No. 5 King and rotary drilling equipment is expected to be installed during the week. Union has completed four commercial producers on the King lease up to the present time.

Richfield

Union Oil Co. finished an excellent producer in the Richfield district of Los Angeles Basin when No. 4 Ayres & Parsons was brought in flowing 475 bbls. of 24.7 gravity oil per day following the completion of work at 3,729 feet. This well, originally finished in the Chapman zone and subsequently abandoned, was re-entered a few months ago and deepened to the Breen zone, from which it is producing. General Petroleum spudded in No. 46-A Santa Fe, in the Santa Fe Springs Field, and this project is scheduled for completion in the Meyer zone. Standard Oil Co. completed No. 72 Baldwin in the Montebello Field and this well, finished in the upper zone, was swabbed in flowing 405 bbls. of 26.1 gravity oil and 580,000 feet of gas per day from 3,850 feet. Immediately upon the completion, the crew was transferred to No. 73 Baldwin, spudded in a short time later. Standard is rigging up an additional well in the Montebello Field, No. 18 Temple, which will be carried to the deep Cruz zone, discovered by Universal Consolidated Oil Co. last year. Texas Co. is rotating on No. 4 Barry at 2,500 feet and is making preparations to spud in two additional deep zone wells on the Baldwin and Prugh leases. Union Oil Co. recompleted No. 2 Callender in the Dominguez Field of Los Angeles Basin early in the week and it was returned to production doing 235 bbls. of 31.1 gravity oil per day on a compressor from 4,416 feet.

Long Beach

Several excellent completions were chalked up in the Long Beach Field and two showed satisfactory production. The Western Empire Petroleum Co. finished No. 1 Wallow at 4,863 feet pumping 510 bbls. of 28.1 gravity oil per day. The company landed a 4¾-inch liner carrying 805 feet of perforations. Atascadero Oil Co.'s No. 2 Signal was another satisfactory completion bottomed at 2,935 feet and finished with a 6⅝-inch liner including 300 feet of perforated. It was brought in pumping 508 bbls. of 26.8 gravity oil per day. Both these wells were completed at relatively shallow depths. Wil-Daw Oil Co.'s No. 1 Signal, completed at 3,950 feet and finished with a 6¼-inch liner carrying 352 feet of perforated, was brought in pumping 388 bbls. of 27.1 gravity oil per day. Bremil Petroleum Co.'s No. 4, bottomed at 5,150 feet and finished with a 5-inch liner, including 495 feet of perforated, was brought in pumping 102 bbls. of 26.9 gravity oil per day.

Ventura Avenue

General Petroleum conducted another production test on No. 15-A Barnard in the Ventura Avenue Field, but the output did not show any great diminution of water as the cut approximated 20 per cent. This well was originally given a production test several months ago from 9,000 feet but failed to show commercial production due to water. The hole has been plugged back by stages and tested out at frequent intervals

(Continued on Page 64)

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well, location—	S.T.R.	Depth	Status:
General Pet., No. 9 Capitan, Santa Barbara Co.	32- 5-30	rig	suspended
General Pet., No. 7 Capitan, Santa Barbara Co.	32- 5-30	1,463	plug 1,451 ft.
Shell Oil Co., No. 2 Capitan, Santa Barbara Co.	32- 5-30	mtl.	building rig
Lincoln Drlg. Co., No. 3 Summerland, Santa Barbara Co.	21- 4-26	2,603	suspended
Dietzmann, J., No. 1 Summerland, Santa Barbara Co.	16- 4-26	3,846	rd. sd. drilling
Meganos Oil Co., No. 1 Purisima, Santa Barbara Co.	28- 8-34	3,000	suspended
Barnsdall-Rio Grande, No. 8 Doty Elwood, Santa Barbara	15- 4-29	4,868	recrilling
Signal O. & G. Co., No. 2 Elwood, Santa Barbara Co.	tideland	5,120	sd. sh. drilling
Cuyama Oil Co., No. 1 Cuyama, Santa Barbara Co.	12-10-27	3,950	suspended
Richfield, No. 3 Rincon fee, Ventura Co.	17- 3-24	2,557	cleaning out
Wood'ew Pet., No. 1 Rincon, Ventura Co.	4- 3-24	7,612	whipstk 6,995
Hancock Oil Co., No. 1 Fillmore, Ventura Co.	13- 4-19	3,357	recemented
Oil Ridge Oil Co., No. 1 Fillmore, Ventura Co.	1- 4- 9	360	hd. sd. drilling
Chappius, Louis, No. 1 Sespe, Ventura Co.	1- 4-20	....	build. road
Driggs Pet., No. 1 South Mountain, Ventura Co.	17- 3-20	4,270	plug 4,162 ft.
Kneiper & Atha, No. 1 Bardsdale, Ventura Co.	7- 3-19	1,610	rd. sh. drilling
Williamson & Donaher, No. 1 Simi, Ventura Co.	36- 3-18	790	suspended
Dabney, H. R., No. 1 Simi, Ventura Co.	22- 2-18	1,200	suspended
Midlands Pet., No. 1 Ojai, Ventura Co.	9- 3-23	7,830	C.O. 5,491 ft.
Laing & Jacobs, No. 1 Shiells, Ventura Co.	32- 4-19	321	rd. sh. crilling
Wilshire Oil Co., No. 1 Sulphur Mountain, Ventura Co.	20- 4-21	2,198	suspended
Kirk, W. A., No. 1 Sulphur Mountain, Ventura Co.	21- 4-21	1,522	br. sh. drilling
Mosher, J. W., No. 1 Santa Paula, Ventura Co.	22- 4-21	1,803	br. sh. drilling
Las Posas Pet., No. 1 Las Posas, Ventura Co.	22- 3-20	5,900	gr. sd. drilling
International Oil Developers, No. 1 Conejo, Ventura Co.	33- 2-20	2,950	hd. sd. drilling
Hub Pet. Co., No. 1 Gould Hills, Kern Co.	22-29-21	6,840	suspended
Shell Oil Co., No. 1 Gould Hills, Kern Co.	21-29-21	1,311	sd. sh. drilling
Standard Oil Co., No. 1 McKittrick, Kern Co.	15-30-22	mtl.	building rig
Casa Mira Oil Co., No. 1 Belridge, Kern Co.	29-28-20	4,982	suspended
General Pet., No. 1 Belridge, Kern Co.	30-28-21	9,972	recemented
Union Oil Co., No. 18 Belridge, Kern Co.	36-27-20	3,121	sd. sh. crilling
Cumberland Oil Co., No. 2 Devils Den, Kern Co.	17-26-18	3,270	suspended
Hanna, Tom, No. 1 Devils Den, Kern Co.	25-25-18	3,516	suspended
Pyramid Hills Oil Co., No. 1 Devils Den, Kern Co.	24-25-18	4,140	suspended
Fowler, F., No. 1 Blackwell Corner, Kern Co.	15-26-19	3,170	suspended
Associated, No. 1 Lost Hills, Kern Co.	2-26-20	7,001	25,000 B/D wt.
Howells Bros., No. 1 Round Mountain, Kern Co.	32-28-29	1,780	sd. sh. drilling
Keno Pet. Co., No. 1 Loredo, Kern Co.	14-29-27	4,531	suspended
Bankline Oil Co., No. 1 Kern Front, Kern Co.	28-28-27	3,255	abandoned
Carribou Record Oil Co., No. 1 Kern Front, Kern Co.	11-28-27	2,101	hd. sh. drilling
Shafter Oil Co., No. 1 Shafter, Kern Co.	8-28-25	312	sd. drilling
Ohio Oil Co., No. 1 Buena Vista Lake, Kern Co.	31-31-26	5,140	sd. sh. drilling
Union Oil Co., No. 1 Union Avenue, Kern Co.	15-30-28	5,647	recemented
Alta Oil Co., No. 1 Union Avenue, Kern Co.	6-30-28	5,592	sd. sh. drilling
Hogan Pet. Co., No. 1 Shell Mountain View, Kern Co.	29-30-29	5,910	cleaning out
Hogan Pet. Co., No. 3 Shell Mountain View, Kern Co.	29-30-29	1,202	sd. sh. drilling
Hogan Pet. Co., No. 3 Mountain View, Kern Co.	29-30-29	5,799	O.S. drilling
Monterey Expl. Co., No. 1 Edison, Kern Co.	15-30-29	rig	rigging up
Labacle, E. L., No. 1 Mountain View, Kern Co.	29-30-29	5,386	sd. sh. drilling
Mohawk Pet., No. 4 Mountain View, Kern Co.	30-30-29	5,731	cemented
Standard, No. 1 Mountain View, Kern Co.	19-30-29	mtl.	building rig
Comanche Oil Co., No. 1 Comanche, Kern Co.	15-32-29	1,456	suspended
Badger Oil Co., No. 1 Wheeler Ridge, Kern Co.	31-11-19	4,976	suspended
Gatton & Luethe, No. 1 Madera, Madera Co.	32-10-17	3,020	suspended
Russ Oil Synd., No. 1 Kingsburg, Fresno Co.	20-12-11	3,900	plug 3,620 ft.
Bergman, Harry, No. 1 Kingsburg, Fresno Co.	12-12-11	4,490	sd. sh. drilling
Graham & Loftus, No. 1 Raisin City, Fresno Co.	20-15-18	5,906	suspended
Emerich Oil Co., No. 1 Mendota, Fresno Co.	35-13-13	3,871	sd. sh. drilling
Western Gulf, No. 1 S. P., Fresno Co.	3-17-15	7,700	sd. sh. drilling
Hogan Pet. Co., No. 1 Joaquin Ridge, Fresno Co.	28-20-16	6,605	suspended
Kent & McDonald, No. 1 Carrizo Plains, San Luis Obispo	3-22-22	3,830	suspended
Farrel Pet., well No. 1, San Luis Obispo Co.	18-31-12	1,095	cleaning out
Willet Oil Co., No. 1 Cholame, San Luis Obispo Co.	10-25-15	rig	rigged up
Guess, E. B., No. 1 Corcoran, Kings Co.	7-21-21	6,197	suspended
Triune O. & G., No. 1 Tulare Lake, Kings Co.	5-23-20	100	sd. drilling
Tulare Basin Oil Co., No. 1 Tulare Lake, Kings Co.	2-23-19	....	location
Knudsen & Schmidt, No. 1 Reef Ridge, Kings Co.	36-23-17	6,873	suspended
Magee & Stone, No. 2 Alpaugh, Kings Co.	33-21-22	3,149	suspended
Douglas, J. M., well No. 1, Monterey Co.	36-22- 9	822	sd. sh. crilling
Na-Pa Oil Co., No. 1 Griffith, Napa Co.	7- 8- 3	3,750	suspended
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	5- 2-10	4,760	hd. sh. drilling
Pacific Northern Oil Co., No. 1 Guinda, Yolo Co.	23-12- 3	5,915	hd. sd. drilling
Buttes Oilfields Co., No. 1 Marysville, Sutter Co.	35-16- 1	2,731	gas—shut in
Buttes Oilfields Co., No. 2 Marysville, Sutter Co.	35-16- 1	4,136	Andesite dirg
Tehama Pet. Co., well No. 1, Glenn Co.	4-22- 5	4,696	suspended
Milham Expl. Co., No. 1 Tracy, San Joaquin Co.	5- 4- 5	rig	rigging up
Orland Oil Synd., No. 1 Orland, Tehama Co.	31-23- 3	3,840	cleaning out

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well, location—	S.T.R.	Depth	Status:
Palm Ridge Oil Co., No. 1 Palms, Los Angeles Co.	2- 2-15	7,150	suspended
Clayton, G. L., No. 1 Clearwater, Los Angeles Co.	31- 3-12	1,946	sd. sh. drilling
Pacific Gulf, No. 1 Athens, Los Angeles Co.	19- 3-12	6,034	suspended
Pacific Dev. Co., No. 1 Watts, Los Angeles Co.	16- 3-13	3,902	suspended
Dominguez Oil Co., No. 1 Dominguez, Los Angeles Co.	34- 3-13	mtl.	building rig
Mutual Oil Co., No. 1 Dominguez, Los Angeles Co.	3- 4-13	1,080	cemented
Kelly & Son, No. 1 Torrance, Los Angeles Co.	7- 4-13	6,391	sd. sh. drilling
Wehrman, J. K., No. 1 San Pedro, Los Angeles Co.	14- 5-14	1,350	Schist drlg.
Nudson, T. T., No. 1 Inglewood, Los Angeles Co.	17- 2-14	rig	rigged up
Oakes & Mead, No. 1 Lyndwood, Los Angeles Co.	31- 2-12	4,940	suspended
Community Oil Co., No. 1 Montebello, Los Angeles Co.	34- 1-11	5,490	redrilling
Universal Consd., No. 2 Montebello, Los Angeles Co.	5- 2-11	6,000	sd. sh. drilling
Universal Consd., No. 3 Montebello, Los Angeles Co.	5- 2-11	5,940	sd. sh. drilling
Texas Co., No. 1 Montebello, Los Angeles Co.	6- 2-11	2,520	sd. sh. drilling
Standard, No. 1 Montebello (deep), Los Angeles Co.	6- 2-11	315	sd. drilling
Midfield Oil Co., No. 1 Pico, Los Angeles Co.	19- 2-11	2,016	cemented
Kyle, W. S., No. 1 Pico, Los Angeles Co.	7- 2-11	....	material
Rex Anglin Dev. Co., No. 1 Los Nietos, Los Angeles Co.	29- 2-11	rig	rigged up
Signal Pet., No. 1 Puente, Los Angeles Co.	14- 2-10	4,908	cleaning out
Eldorado Pet., No. 1 Puente, Los Angeles Co.	30- 2- 9	3,030	hd. sd. drilling
Barstow Oil Co., No. 1 Saugus, Los Angeles Co.	35- 5-16	2,136	suspended
Alpha Oil Co., No. 1 Calabasas, Los Angeles Co.	22- 1-18	1,317	suspended
Marble, Willard, No. 1 Van Nuys, Los Angeles Co.	6- 2-16	2,760	suspended
Black Eagle Oil Co., No. 1 Huntington, Orange Co.	tideland	3,298	hd. sd. drilling
Nuoil Co., No. 1 Newport, Orange Co.	29- 6-10	5,770	sd. sh. drilling
Recovery Oil Co., No. 1 Sunset Beach, Orange Co.	16- 5-11	3,400	suspended
Superior Oil Co., No. 1 Sunset Beach, Orange Co.	19- 5-11	101	sd. crilling
Placentia Dev. Co., No. 1 Placentia, Orange Co.	31- 3- 9	3,981	hd. sh. drilling
Rubens, Sy., No. 1 Atwood, Orange Co.	19- 3- 9	3,368	pump wtr.
Bardeen Pet., No. 1 Coyote, Orange Co.	13- 3-10	3,100	O.S. drilling
Bartholomae Oil Co., No. 1 Coyote, Orange Co.	22- 3-10	3,591	pump 40 B/D
Spindle Top Oil Co., No. 1 Salton Sea, Riverside Co.	25- 7-10	3,590	suspended
Great American Pet., No. 1 Chino, San Bernardino Co.	18- 2- 8	2,645	suspended
Great American Pet., No. 2 Chino, San Bernardino Co.	18- 2- 8	2,600	repair rig
McCarthy, C. F., No. 1 Chino, San Bernardino Co.	14- 3- 6	803	suspended
Tehama Pet., No. 1 Santa Ana Canyon, San Bernardino	33- 2- 8	787	sd. sh. drilling
San Diego Gas & Pet., No. 1 San Ysidro, San Diego Co.	32-18- 2	....	location

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Cut Bank Field Extended Nine Miles Southward; Drilling in Lea County, New Mexico, Gains

By TOLBERT R. INGRAM
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Jan. 29.—Sale of oil and gas leases on state land in New Mexico is showing a revival of interest. Three new locations were made in Lea County, two in the Jal Pool and one on the west edge of the Hobbs Pool. The Pecos Valley Gas Co. completed a small gas well in Eddy County and Leonard & Barnsdall's No. 1 State is showing for 2,000,000 feet per day and drilling deeper for oil. George Etz' test in the Railroad Mountain district in Chaves County was dry and abandoned. One new location was reported in San Juan County.

Operators are filing drilling programs on new structures in the Rocky Mountain states. There were no new completions or new locations in Colorado.

S. H. Keoughan and the Wyoming Southern Oil Co. have made a deal for a shallow test on the Shawnee structure, in Converse County, Wyoming. The Reeder well on the Overland Dome in Carbon County, is nearing the objective at 4,000 feet with considerable oil in the hole. A new operation was reported in Lincoln County.

In Montana, Texas Co.'s No. 1 State, in the South Cut Bank area, which extends the Cut Bank Pool 9 miles, swabbed 258 bbls. first 24 hours. Two new locations were reported in the northern part of the field. Western Natural Gas Co.'s No. 1 Shaffer, on the Whitlash structure in Liberty County, came in flowing better than 100 bbls. per day, estimated, upon drilling into a deeper sand.

NEW MEXICO

The monthly sale of oil and gas leases on state land at Santa Fe on January 10 by Frank Vesely, commissioner of the land office, resulted in some spirited bidding. The minimum rental on any tract sold is $100 for the first year and for specified amounts thereafter. Twenty-five tracts were offered at the sale and one or more bids were submitted on most of them. Most of the acreage offered was in Lea County. William D. Morris, of Fort Worth, bid $117.77, and Harrison D. McFadden, East Orange, N. J., bid $112 for Tract 1, comprising 1,000 acres in Townships 9 and 10s, Ranges 34, 35, 36 and 37, located 35 miles northeast of Lovington. Rentals on the tract after the first year are 10 cents per acre. These were typical bids, except for some more favorably located tracts. The Amerada Petroleum Corp. bid $1,250.50 on Tract 5, comprising 4,960 acres to the north, east and west of the town of Lovington. Phillips Petroleum Co. bid $541, and the Amerada Petroleum Corp. $680 on Tract 13, consisting of 1,040 acres just to the south of Lovington. This tract carries a minimum rental of 50 cents per acre.

Tract 14, consisting of 360 acres in Section 20-17-35, in the Caprock area, northwest of the Hobbs Pool, attracted several bidders. Empire Gas & Fuel Co. bid $684; the Texas Co., $817.20; Magnolia Petroleum Co., $900; Devonian Oil Co., $1,080; and the Phillips Petroleum Co., $1,181. This tract takes a minimum rental of 50 cents per acre.

Tract 15, consisting of 237.94 acres in Sections 3, 6 and 14-17-35, Caprock area, brought a bid of $240 from the Magnolia Petroleum Co., and $428.29 from Texas Co. Tract 21, comprising 311 acres in Sections 19, 20 and 36-21-35, Empire area, brought a bid of $1,108 from the Ohio Oil Co. Those listed above show about the range of bids on all the tracts offered.

Lea County

The proration schedule for the Hobbs Pool for the last half of January showed practically no change in potentials or allowable outlet, except that only one unit is now given special allowance on account of water and the number of 40-acre units taking the 40 per cent on acreage and 60 per cent on potential basis was increased from 17 to 20. These are the edge units showing some water. The remainder of the 183 units used in making up the schedule retain the 25-75 basis for prorating the production.

Drilling operations in Lea County continue to increase and three new locations were released the past week, two in the Jal area and one in the Hobbs Pool. Noble Brothers' No. 1 Shell-State, SE cor. NW Section 24-18-37, an outside well on the west side of the Hobbs Pool, is moving in materials. It is half a mile due west of the Gypsy Oil Co.'s No. 1 Graham, SE cor. NE Section 24, which was completed in 1930 for 4,406 bbls. initial. This is about the only part of the pool in which the edge has not been determined by drilling.

Humble Oil & Refining Co.'s No. 4-A Lindley, C NW NW Section 24-25-36, in the Jal area, is moving in materials for an offset on the west to the Southern Petroleum Exploration Co.'s No. 1 Ascarate, which was completed recently for 5,000 bbls. The other Jal location is the Barnsdall Oil Corp.'s No. 1 Forrest, NE NW SW Section 24-25-36, half a mile south of the new Humble location.

Western-Anton's No. 1 Conditt, C SW SW Section 12-25-36, which recently killed a flow of 50,000,000 feet of gas per day to complete, is reaming at 3,351 feet and will core a little deeper and make a Haliburton test. The Texas Co.'s No. 1 Shepard, NW cor. SW Section 5-26-27, an old well drilling deeper, is coring at 3,267 feet in lime, 5 feet below old bottom, and the same company's No. 2 Moberly, C NW SE Section 8-26-37, is building rig.

The Texas Co.'s No. 1 Lea, SW cor. NW Section 14-20-34, Lea area, is rigging up cable tools and drilling water well, and its No. 2-B Lynch, C SE SW Section 27-20-34, is drilling at 1,000 feet in red shale and sand. Same company's No. 4-A State, C Lot 7, Section 2-21-33, Lea Pool, is drilling at 2,950 feet in salt.

Gypsy Oil Co.'s No. 1 La Munyon, C NE NE Section 28-23-37, Cooper area, is drilling at 135 feet in sand.

Eddy County

Pecos Valley Gas Co.'s No. 1 Wilson-State, NE cor. Section 5-19-28, Artesia area, was completed at 718 feet as a gas well with an initial flow of 300,000 feet per day at 705-15 feet.

Stovall & Marshall's No. 1 Mock, C SE SE Section 29-24-27, Black River district, southern Eddy County, which holds out promise of opening a small pool, is running rods and tubing to pump. Total depth is 2,338 feet, in sand, with 500 feet of fluid in the hole. The sand at 2,310-30 feet was shot with 60 quarts. The 6⅝-inch is at 2,260 feet with packer at 2,241 feet. It is estimated at around 25 bbls.

Leonard & Barnsdall's No. 1 State, SW cor. Section 21-17-29, Jackson area, is drilling at 2,285 feet in gray lime. It had 1,000,000 feet of gas per day at 2,199-2,201 feet and another 1,000,000 feet at 2,257-65 feet. The 8¼-inch was mudded at 2,120 feet.

Ralph Spearow and others' No. 1 McClelland, SW NW NE Section 22-22-23, Indian Creek district, western Eddy County, has recovered lost tools and is drilling at 4,828 feet in black lime. The Pecos Valley Drilling Co.'s No. 1 McIntyre, NW NW Section 27-23-25, Dark Canon district, is drilling at 2,457 feet in black shale.

Grayburg Oil Co.'s No. 4 Burch, C SE NW Section 19-17-30, Maljamar area, which was delayed in completion by a fire which burned the rig, has recovered lost tools and completed the well at 3,125 feet. Initial production was 292 bbls. in 15 hours, open flow. It topped the salt at 440 feet, bottomed that formation at 885 feet and topped the red sand at 1,970 feet. Same company's No. 5 Burch, an east offset in the C SW NE Section 19-17-30, is still a location.

Chaves County

George Etz and others' No. 1 Etz, C SE NE Section 14-8s-26, Railroad Mountain district, 24 miles northeast of Roswell, failed to show anything worth while upon being deepened to 1,970 feet and was plugged and abandoned. It had a light show of oil at 1,506-18 feet and 3 bbls. of sulphur water per hour at 1,834-44 feet and 100 feet of salt water at 1,868-75 feet. Warman Oil Trust's No. 1 Weldon & Hoar, NW cor. SE Section 9-14-25, Blackdom district, which has been shut down for the past two months at 1,223 feet, has resumed and is drilling at 1,312 feet in brown lime.

San Miguel County

Cabra Springs Oil & Gas Co.'s No. 1, C NE NE Section 22-12-22, Pino Mesa, had some water at 2,300 feet which was shut off and is shut down at 2,450 feet and carrying the 8¼-inch.

San Juan County

One new location in the Kutz Canon district is reported in Tom Irwin and others' No. 1, C NW NW Section 19-28-10w, which is building standard rig.

Aztec Producers, Inc.'s No. 1, SE SE Section 28-30-11w, Aztec district, is drilling at 200 feet, and Meier & Culberson's No. 1 Lemley, S NE Section 32-30-11, is installing heavier power at 853 feet, total depth. R. C. Oswell's No. 4, SW NW NW Section 34-30-11, landed the 6¼-inch at 1,630 feet and is underreaming to bottom at 1,700 feet.

COLORADO

Numerous operators in the Rocky Mountain area have been preparing statements the past few weeks on the status of new pools to be filed with Administrator Ickes on or before January 31. There are numerous pools in this territory which do not have 10 producing wells, and, accordingly, are classed as new pools under the order issued December 20 by the administrator. In most instances no new development work is contemplated at this time and a statement of that fact with the status of the wells is considered ample for present requirements. However, plans for development must be filed and approved before any additional drilling can take place. New pools include new horizons with less than 10 commercial wells and that requirement takes in Tensleep sand wells in Salt Creek, Lakota sand wells in the Big Muddy, Madison lime wells in several of the fields in the Big Horn Basin, the Sundance sand in Lance Creek, and several other of the older fields, while there are a number of pools throughout Wyoming, Colorado and Montana which have less than 10 wells altogether. In Colorado these include the Greasewood, Berthoud and North McCallum Fields. In Montana, the Dry Creek, Whitlash and Lake Basin Fields are included.

Moffat County

The Texas Co.'s No. 5 Parkinson, NW SW Section 23-4n-92, Iles Dome, cored and reamed to 3,371 feet and cemented the 6⅝-inch on bottom. This well is expected to be an early completion in the Sundance. Stanolind Oil & Gas Co.'s No. 21-X Parkinson, NE SW NW Section 23-4n-92, is drilling at 3,150 feet. It topped the Frontier at 2,411 feet and the Dakota at 2,800 feet.

The Rocky Mountain Gas Co.'s No. 2 Bogenschultz, SE cor. Section 9-6n-91, Craig Dome, is recementing the 5⅓-inch liner at 2,752 feet. The gas at 2,750-52 feet, which gauged 1,580,000 feet per day, is now believed to be coming from the first Mesa Verde sand instead of the second. It probably will be drilled down to the second sand and possibly to the third. The third sand was the big producer in No. 1 Bogenschultz.

Park County

South Park Oil Co.'s No. 1 Milligan, NE cor. SE Section 13-8s-76, Jefferson district, is drilling at 3,171 feet in the same hard rock which has hindered progress for several weeks.

Huerfano County

S. W. Pressey's No. 1 Ojo, SW NE Section 10-29-69, Oak View district, which has been shut down at below 2,300 feet on account of snow and the death of a son of the head driller, is resuming.

Larimer County

Colorado Producers, Inc.'s No. 1 Foster-Motz, SW SE SE Section 17-4n-69, Berthoud district, is drilling at 1,525 feet in Pierre shale.

Fremont County

Waterville Oil Co.'s No. 1 State, SE cor. NW Section 16-18-69, Phantom Canon, has resumed at 2,440 feet and is underreaming the 6⅝-inch.

WYOMING

Carbon County

Earl W. Reeder, Inc.'s No. 1 Union Pacific, C SW SW Section 19-20-83, Overland dome, is drilling close to 3,900 feet. There is some doubt about the identification of the horizons in which several good shows of oil recently were encountered, but the prevailing opinion among the geologists is that these were in the Frontier and that the hole will have to go more than 100 feet deeper before it encounters the Dakota.

Petroleum Exploration Co.'s No. 2, SW SE SW Section 29-23-88, Buck Springs district, underreamed and lowered the 12½-inch to 1,045 feet and is drilling at 1,050 feet. It has had several shows of oil and gas. It topped the first Wall Creek in the Frontier at 818 feet.

Ohio Oil Co.'s No. 1 Hazlett, NE NW Section 34-23-79, Allen Lake, has recovered lost drill stem and is drilling at 3,015 feet and drawing near to the objective Tensleep. It had a gas blowout

(Continued on Page 64)

Prospective New Oil Pool Opened in Michigan By Sun Wildcat Test in Osceola County

By PAUL A. ELLIOTT
Staff Correspondent, Michigan Fields

MUSKEGON, Mich., Jan. 29.—Coming close upon the heels of the record year of 1933, the Sun Oil Co.'s No. 1 William O. Flemming, a wildcat test located NE SE NW Section 5-17n-8w, Evart Township, Osceola County, 1 mile west of the village of Evart, swabbed and flowed about 50 bbls. in the first 24 hours from the upper Traverse formation as the discovery of a prospective new Michigan oil pool last week.

The oil, with an estimated flow of about 500,000 feet of gas, was encountered 33 feet in the formation and drilling was suspended at 3,185 feet to test.

As it was drilled in with an open hole for the last 1,400 feet considerable trouble was being experienced in running a string of 5-inch casing to give the well an accurate test. Water also was reported causing some difficulty.

The Flemming well is located about 35 miles northwest of Mount Pleasant and about 30 miles north and a few miles east of the Austin Township, Mecosta County, gas pool. It substantiates a prediction of Dr. R. A. Smith, state geologist, and his assistant, Dr. R. B. Newcombe, that more oil pools will be found on a northwest line from the Mount Pleasant area to Manistee as it is on a direct line between these two points.

It was located by George Meyers, Sun Oil Co. geologist, and was drilled by the Atha Drilling Co. of Mount Pleasant. It is the third test in Osceola County, long considered a likely area. The first Osceola test was drilled to 3,836 feet by the Mellon-Pollock Oil Co. on the Johnson lease in Section 35, Lincoln Township. It was abandoned in 1930 despite shows of gas at 3,400 feet and oil at 3,822 to 3,827 feet.

The Sun Oil Co. drilled a shallow test in 1931 in conjunction with the Grayling Development Co. in Section 2, Hersey Township, reaching a depth of 1,512 feet after a gas show at 1,298 to 1,335 feet in the Michigan sand.

The Flemming well will be given a thorough test before being carried to the Dundee as originally planned.

Lapeer County

Two other wildcat tests in widely separated areas also claimed the attention of Michigan operators when they reported shows of oil and gas, respectively.

Kehlet and Flynn's No. 1 Herbert Branick test in Section 9, Oregon Township, Lapeer County, southeastern Michigan, showed oil in the Berea at approximately 1,410 feet where it was shot after being plugged back from a total depth of about 2,425 feet. It also had a show of 70 feet of oil in the hole struck in the Dundee at about 2,375 feet before encountering bottom water after 50 feet more drilling early in December. V. M. Voorhees, Muskegon and Mount Pleasant contractor, drilled the well.

Arenac County

A show of gas in the Berea sand at about 1,450 feet was reported in Maynard L. Smith's No. 1 Gilbert Proulx, NW SW NE Section 12-19n-6e, Au Gres Township, Arenac County, one of two tests drilling in this section about 35 miles southeast of the Ogemaw Field and on the shores of Saginaw Bay.

Two comparatively small oil producers were completed during the week, one in Porter Township, Midland County, and the other in Vernon Township, Isabella County, with a new gasser also drilled in in Vernon Township; three other wells drilled into the Dundee pay sands in Porter awaiting acid treatment and a new well drilled into the upper Traverse pay sands in the Oceana County Field also awaiting acid treatment to determine possible initial production.

The Pure Oil Co.'s No. 1-B W. W. Hoyt, SW SW NW Section 21-13n-1w, Porter Township, flowed about 500 bbls. initial as the largest completion in proved fields.

Mellon and Pollock's No. 5 John Stough, NE SE SW Section 23-16n-4w, Vernon Township, struck the Dundee pay sands at 3,702 feet and was completed at 3,707 feet for 100 bbls. initial.

Failed to Flow

Pure Oil Co.'s No. 3 C. E. Baxter, SW SW SE Section 15, Porter Township, filled up 2,500 feet with oil but did not flow. Stork Oil Co.'s No. 2 James Hill, NE SW NE Section 22, same township, partly filled with oil but failed to flow. Bradner-Vaughan Development Co., Inc.'s No. 1 Farmers State Bank, SW NE SW Section 8, Porter Township, had 500 feet of oil in the hole.

The No. 2 Hill topped the Dundee at 3,375 feet and finished at 3,417 feet, while the Farmers State Bank topped the lime at 3,409 feet and suspended operations at 3,441 feet.

All three of these wells will be treated with acid before completion as the Smith Petroleum Co.'s No. 3 Elic Buschre, SW SE NE Section 22, Porter Township, boosted from an initial of about 60 bbls. to 315 bbls. in 18 hours, or an estimated 450 bbls. a day in the Dundee.

Eight more wells, seven in Porter Township and one in Greendale Township, Midland County, either had topped the Dundee and were waiting for the 15-day shutdown period to expire before drilling in or were nearing the Dundee casing point.

The Porter wells included J. W. Campbell and Vera Nunn's No. 1 H. W. Fordney, NW SW SE Section 18, carried to the Dundee after a flow of 200 bbls. a day in the upper Traverse; Gordon Oil Co.'s No. 4 W. J. Diebel, SW SE NW Section 18; Pure Oil Co.'s No. 4 P. O. Mates, NE NW SE Section 22, and No. 4 A. C. Wyant, NW SW SW Section 16; Theodore Oil Co.'s No. 4 Campbell, SW NW NW Section 17; W. J. Wilson's No. 2 Hathaway, NE NE NW Section 18, and Wells Brothers' No. 1 Joseph H. Otway, SE SE SW Section 22. Branigar, Giffert and Reasor's No. 1 Fred and Hattie B. Sias, SE NW SE Section 8-14n-2w, Greendale Township, also has reached the Dundee lime and is cased ready to drill in.

W. Hunter Atha's No. 1 J. C. McGuire, NW NE Section 36-16n-4w, Vernon Township, Isabella County, was brought in for an open flow capacity of 1,000,000 feet of gas a day in the Michigan series.

Oceana County

H. C. Nelson's No. 1 Elmer and Bessie Newell, NW SE Section 36-15n-17w, Hart Township, Oceana County, drilled into the upper Traverse pay sands with a good show of oil to be treated immediately with acid before completion. It is a quarter mile west of Mr. Nelson's No. 2 A. Doolittle well, the nearest producer.

James E. Flanagan's No. 1 Clifford Garnett, SE SE Section 36, located about a mile west of production in the Oceana Field, also was nearing completion in the Dundee.

Five other extension and wildcat wells are drilling in Oceana County with a new location for a sixth announced by John B. Northcott, a new operator in the field.

Muskegon County

The Muskegon Oil Corp. is driving pipe on its No. 1 William Vandermade, SW SE Section 26-10n-15w, Egelston Township, a new Muskegon County structure test announced last week and included in this week's permits.

New deepening activity also is expected in the Muskegon Township area of the Muskegon Field as the result of recent successes in the Monroe gas sand about 200 feet below the Dundee pay sands.

Two wells nearing gas pay sands of the Michigan series in Broomfield Township, Isabella County, are the Pure Oil Co.'s No. 1 Herman C. Lueder, C SE NE Section 10-14n-6w, and the Isabella Oil Development Co.'s No. 4 Keeler-Mitchell, NW SW Section 4, each about 1,000 feet deep. Two other wells are drilling in the field, including William Cline's No. 1 Weideman estate, C NW SW Section 9, and J. E. Harding's No. 1 Todd, NE NE NE, Section 7, a west extension test.

Ogemaw County

Pure Oil Co.'s No. 1 Mary Fisk, SW SE SW Section 27-22n-2e, West Branch Township, Ogemaw County, drilled into the upper Traverse formation without success and will continue to test the Dundee.

W. Hunter Atha's No. 1 Ed Hutchins, SE NW SE Section 28, also in West Branch Township, is expected to be the next Ogemaw test into the Traverse formation which it topped and was preparing to drill in as the week closed.

Four other Ogemaw tests were active with rig up for another.

Other Wildcats

K. B. Montigel's No. 1 Raycraft in Section 20, Pine River Township, Gratiot County, is expected to hit the Michigan gas sand within a few days.

Two Saginaw County wildcats were drilling in the Dundee lime at depths ranging between 3,200 and 3,300 feet with no shows yet. They are Alex Jeffrey's No. 1 John Hubbell, NE NE SE Section 7-11n-2e, Fremont Township, and J. V. Spillane's No. 1 Lamon Russell, C NW NE Section 24-12n-1e, Jonesfield Township, located about 10 and 7 miles, respectively, southeast of the big Porter Pool.

Six other wildcats including two in Jasper Township, one in Mount Haley Township, and one in Lee Township, all Midland County, one in Vernon and the other in Denver Township, both Isabella

Improvement in Development Work Is Shown in the Central West Division

BY GEORGE A. WHITNEY
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Jan. 29.—An improvement is shown in development work in some of the Central West divisions, and reports are that the early spring will show further test work. Numerous old producing wells are being abandoned. In Wood County there are three wells under way, Mary V. Congen's No. 1 on the C. E. Mercer farm, Section 14, Liberty Township; William P. Hoopler and others' No. 6 on the Mary Reitzel farm, Section 23, Perrysburg Township, and Pember and Raydure's No. 1 on the R. and E. Wagner farm, Section 27, Jackson Township. Chidester, Baldwin and others abandoned No. 5 on the Frederick farm, in Henry Township, and A. T. Carpenter abandoned Nos. 1, 2 and 3 William Landis farm, Section 27, Portage Township, also in Wood County.

In Hancock County, Bosse Brothers are shut down at 1,481 feet on the H. and H. Bosse farm, Section 18, Van Buren Township.

In Sandusky County, C. H. Benke is drilling on his farm with other associates in Section 35, Woodville Township, and is ready to drill into the Trenton lime. Unknown parties are reported drilling No. 3 on the L. Gerwin farm, Section 3, Woodville Township. In Scott Township, Homer Blessing and others have abandoned Nos. 3, 4 and 5 on the J. Burnett farm, Section 29, and J. P. Evans has abandoned Nos. 2, 3, 4 and 5 on the Sardis B. Schwind farm, Section 33.

In Ottawa County, R. M. Bell abandoned Nos. 2, 3, 4 and 5 on the Ferdinand Reichman farm, Section 17, Allen Township, and Nos. 1, 2, 3, 4 and 5 on Joseph P. Shessler farm, same section.

In Seneca County, S. H. Curry struck a light gas well on the G. H. and M. E. Kimmett farm, Section 3, Hopewell Township. Tiffin Industrial Gas Co. is drilling No. 1 on the Frank Scherger farm, Section 32, Liberty Township.

In Wyandot County, Keiner and others' No. 3 on the Gotlieb Seiler farm, Section 34, Crane Township, with 5 bbls. initial at 1,345 feet. U. & M. Gas Co.'s No. 3 on the McLeoyd farm, Section 21, Tymochtee Township, is a light gas well at 1,364 feet. Cessna & Teasel have an oil showing on the Thomas Bowman farm, Section 15, Pitt Township, at 1,485 feet.

In Marion County Saliday and others are drilling No. 2 on the J. B. Brockelsby farm, Section 15, Claridon Township.

CENTRAL OHIO

Thirteen completions were reported from the Central Ohio Field, two being oil producers with an initial of 23 bbls., two dry holes and nine gas wells. In Huron County, J. E. Ringler's test on the W. O. Hartman farm, Section 27, Fitchfield Township, is a light shallow gas well at a depth of from 365 to 377 feet. This find may bring about further test work.

In Lorain County, Edson and others' test on the John Burkhardt farm, Sec-

(Continued on Page 78)

County, continued drilling in counties in which several of Michigan's 10 producing oil pools are located. Two others were active in Lincoln Township, Clare County, and Pine River Township, Gratiot County, in counties with producing gas pools.

Taggart Brothers, Inc., are running drive pipe in their new fifth well in the Austin Township, Mecosta County, gas pool, a mile west extension from their record No. 4 Robert S. Fish well in Section 4, which made 34,000,000 feet a day. They are expected to complete the new well into the Michigan gas sand soon after February 1 after which the American-Michigan Gas Pipe Line Co., of Muskegon, will start laying a 55-mile line to serve Greater Muskegon, which has a combined population of about 65,000.

Permits

Thirteen new permits for wells to be drilled in eight different fields throughout the state were issued last week by the oil and gas division of the state conservation department. Seven were taken out by the Pure Oil Co., leading developers in Michigan.

Five were for Porter Township, Midland County, as follows: Fred W. Turner and others' No. 1 A. J. Megill, NE NE NE Section 28-13n-1w; Pure Oil Co.'s No. 1 Everett Kleinhaus, SW NW NE Section 20; same company's No. 4-A John H. Miller, SE NW SW Section 17; Fred W. Turner and others' No. 1-A G. Root, E E SW Section 21, and same operator's No. 1-A Eugene St. John, W E SW Section 21.

The Pure company also took out two new ones for West Branch Township, Ogemaw County, as follows: No. 1 H. W. Shultz, NW NW NE Section 29-22n-2e, and No. 1 Ella G. Silver, SW SW SW Section 26.

Six others, including the Muskegon Oil Corp.'s new structure test in Egelston Township, Muskegon County, previously mentioned, were authorized in as many different sections of the state. The other five are: W. J. Wilson, trustee's No. 1 J. W. Robinson, C NE NW Section 27-12n-5w, Richland Township, Montcalm County; Pure Oil Co.'s No. 1 Bond-Root, C N SE NE Section 3-13n-2w, Jasper Township, Midland County; same company's No. 3 T. E. McCann, NW SE NE Section 7-14n-2w, Greendale Township, Midland County; same company's No. 1 James N. Gatehouse, C SW NE Section 2-14n-6w, Broomfield Township, Isabella County; and Howard F. Patterson's No. 1 David Haskins, NW NW SW Section 26-13n-2e, Ingersoll Township, Midland County, in virgin territory.

Several changes also were made, namely: L. G. Thompson to W. M. McCormick's No. 1 Callihan; Sun Oil Co.'s No. 5 J. L. Miller estate, from NW NE SW to NW SE SW Section 16-14n-1w, Porter Township, and Hagan and Hagan to William McKinley Smith's No. 1 Meid, NW NW NW Section 2-21-2e, Horton Township, Ogemaw County.

A rig was moved in for another test about four locations east of the Wittmer Oil & Gas Co.'s No. 1 McReavy, Section 12, Isabella Township, Isabella County, which recently opened a new territory about halfway between the Vernon and Leaton Township Pools.

Stoddard and Darke also have made location for their No. 4 Floyd M. S. Emery, SE NE NE Section 21, Porter Township, while Charles Teater has made location for two more wells on the Joseph M. Wale lease in Section 22, Porter Township. Wilson and McGee also are reported to have made locations for two more tests on their Carter lease in Section 18, while Dokenva Gas Corp. is expected to make location soon for the No. 1 Finn, in Section 21, Porter Township, a direct offset to Fred Turner's No. 1 Hock, completed last week.

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Several Fair Producers Are Completed During Week in Lower Eastern Fields

BY STAFF CORRESPONDENT

PITTSBURGH, Pa., Jan. 29.—Several fair producers were completed in the lower eastern fields during the past week, the largest of which were in Southeast Ohio. New completions totaled 13, of which seven were gas wells, and six producers added 217 bbls. a day to present totals. There was but one dry hole.

The demand for Pennsylvania Grade crude continues strong and the present daily production is not meeting those requirements. All districts have been unable to meet the requested production allowable and totals are declining from the peak of last fall. Part of this is due to the absence of new flush production and the paucity of new producers.

The best well for the week was No. 1,532 of Preston Oil Co. on the Sunday Creek Oil Co. property in Section 11, Ward Township, Hocking County, Southeast Ohio. It was completed in the Clinton sand at a depth of 3,538 feet and it produced 35 bbls. the first day, natural. After being shot, it started off at 120 bbls. a day. This well is located about 900 feet south of the same company's No. 1,527 on the same tract.

Another fair Ohio well was No. 4 of Leonard Oil & Gas Co. on the Isaac Norris farm, Section 19, Pike Township, Coshocton County. It was completed in the Clinton sand at 3,284 feet and made 50 bbls. the first day after shot. It will probably make a 10-bbl. pumper.

In other parts of Southeast Ohio, completions were few. In Washington County, there were two gas wells. In Section 25, Ledlaw Township, Harry Binegar completed a No. 3 on the L. S. Moore farm on Haught Run in the Salt sand at 985 feet. It gauged 681,000 feet of gas a day. In Section 32 of the same township, Hall and Henning drilled a second test on the J. S. McKee farm on Wingett Run in the Injun sand at 1,470 feet. There was about 72,000 feet of gas a day in the sand at 1,320 feet with a showing of oil at 1,350 feet.

In Meigs County, in SW Section 8, Lebanon Township, Williams & Holmes have spudded in and started drilling a test on the Abner Price farm.

WEST VIRGINIA

Two additional producers were completed in the Lost Run Pool, Clay district, Ritchie County, West Virginia, one of which is now the most northern producer. R. B. Roberts and others completed a second test on the Sada McGinnis farm in the Injun sand at a depth of 1,828 feet. It is showing for 10 bbls. a day. This well is south of the test on that farm which proved dry and north of the Frederick farm No. 3.

On the Charles H. Frederick farm, about 300 feet south of the No. 3, G. B. Hendershot and C. B. Smith completed their No. 4 in the Injun sand streak at a depth of 1,817 feet. It is making about 30 bbls. a day.

Natural production from the Lost Run Pool had declined a considerable degree and with total production in the state falling below the state allowable, most of the wells in the pool were shot. Production was greatly improved, and one of the original wells is now producing 100 bbls. a day and nine of them 50 bbls. a day or more.

In Roane County, the Reedy Oil & Gas Corp. completed a test on the G. A. Knopp farm in Curtis district in the Salt sand and it is showing for 5 bbls. a day.

In Grant and Clay districts, Ritchie County, John Deem drilled a test on the C. M. Welch farm through the Injun sand to a depth of 1,880 feet. It proved to be a dry hole.

Gas Wells

In Boone County the Pure Oil Co. completed two wells on the Federal Coal Co. tract in Sherman district. The No. 60 was completed in the Weir sand at a depth of 2,358 feet and it gauged at 1,862,000 feet a day. Their No. 62 on the same tract was drilled to a total depth of 3,433 feet and is a small gas well. In the same district, the Columbian Carbon Co. completed No. 6 on the Broun-Cochran lease at a depth of 1,886 feet. It will also make a small gas well.

Drilling Operations

On account of the continued demand for crude, several companies are making an effort to increase production by cleaning out their wells and by acid treating. The results have been gratifying. In Big Sandy district, Kanawha County, the South Penn Oil Co. has greatly increased production in the wells on the F. M. Young farm on Jordan Creek by holding a gas pressure on the Weir sand. Production on the adjoining Sophronia Young farm has also increased.

In Cabell County, a new test is drilling in Barboursville district. There the Guyan Valley Gas Co. has spudded in

and started drilling a test on the Chesapeake & Ohio R. R. Co. property. In McComas district, the West Virginia Gas Co. is down 1,600 feet in a test on the Halsey Hensley farm. In Guyandotte district, Black and Sansom have reached 2,640 feet in a test on the F. H. Holswade farm. R. H. Adkins and others are running casing to a depth of 2,043 feet in their test on the Oland G. Charles farm.

In Boone County, the Pure Oil Co. is shut down at 3,211 feet in No. 259 on the Williams Coal Co. lease in Sherman district and the Berea sand is being tested. In this district, the same company has reached 1,388 feet in No. 63 on the Federal Coal Co. tract and 2,045 feet in their No. 64. In Washington district, the Pond Fork Oil & Gas Co. is drilling at 800 feet in No. 16 on the Cole and Crane lease.

In Kanawha County, Holly H. Osborne has started drilling No. 4 on the Goshorn and others lease in Big Sandy district. In this district the Columbian Carbon Co. has reached 1,740 feet in No. 12 on the Queen Land Co. lease and within 200 feet of the Keener sand. In Elk district the Valley Gas Co. is drilling at 700 feet on the G. W. Harless farm, a test.

In Marion County, on the waters of Huey Run in Mannington district, the South Penn Oil Co. is cleaning out their No. 1 on the Rossie J. Sturm farm and will shoot it. It was a gas well in the 30-foot sand at a depth of 3,279 feet and has a small showing of oil.

In Pleasants County, Ross Bonar and others have set a drilling machine on the D. J. Locke farm on a branch of Big Painter Run in McKim district for a test. In this district, Adam Ward has a rig standing for No. 19 on the G. W. Varner farm. In Lafayette district, the Mackey Oil & Gas Co. has shot their test on the E. C. Owens farm and it is being cleaned out for a test.

In Calhoun County, F. F. McIntosh is building a rig for No. 4 on the Mary E. Hays farm in Sherman district and has made a location for No. 5 on the O. S. Bennett farm. His No. 3 on this farm is drilling at 700 feet. C. B. Lewis and others have a location for a test on the Virgil Hickman farm. W. H. Bickel is down 1,350 feet in a test on the Luverna Barr farm. In Lee district, the Simmons Gas Co. has reached 1,700 feet in a second test on the Sylvester Brannon farm, and the Litt Oil & Gas Co. is down 1,500 feet in a test on the J. S. Wade farm. In Sheridan district, Cain and Rothwell are drilling No. 3 on the Lee Roy Jones farm and are down 900 feet. In Center district, Starcher and Richards have spudded in and started drilling a test on the Docie Welch farm.

In Roane County, on Calf Pen Run of Laurel Creek in Spencer district, George E. Smith has started drilling a test on the L. A. Short farm. In the same district, Guy Boggess and others have completed a rig on the William Stine farm, a test, and D. S. Fisher and others are down 1,210 feet in a second test on the Stella V. Knotts farm. In Geary district, Godfrey L. Cabot has started drilling a second test on the G. W. Truman farm. Frank Finley is fishing at 1,675 feet in a test on the W. H. Smith farm, the casing having collapsed on the tools.

In Gilmer County, DeKalb district, C. A. Jarvis and others are drililng a second test on the John H. Houghton heirs farm and have part of the material on the ground for a test on the Susan A. Gainer farm. Charles Despard and others have reached the Injun sand in a test on the M. L. Amos farm and it is showing for an oil well. It is not as yet drilled in. On the F. B. Reynolds farm the Hope Construction & Refining Co. is down 2,132 feet in drilling deeper their No. 6,965.

SOUTHWEST PENNSYLVANIA

In Southwest Pennsylvania, one small producer and two gas wells were completed. The producer was the test of John Lantz on his own farm in Greene Township, Greene County. It was completed in the Injun sand, total depth 1,890 feet, and is making 2 bbls. of oil a day along with about 6 bbls. of water an hour. The top of the Injun sand was at 1,725 feet with oil and water showing at 1,837 feet.

In Dunkard Township, Greene County, the Convex Glass Co. completed their test on the G. C. Ross farm in the Big Injun sand at a total depth of 1,420 feet. The top of the Big Injun sand was at 1,285 feet with gas, estimated at 140,000 feet a day, showing at 1,415 feet.

In Aleppo Township, same county, the Manufacturers Light & Heat Co. drilled deeper their No. 1 on the Anna Henry farm to a depth of 3,646 feet. Gas was found in the 30-Foot sand at 3,070-72 feet. It gauged 184,000 feet a day which blew down to about 95,000 feet.

In Allegheny County, McVey and others are drilling a test on the James Shaw farm in North Versailles Township. It is about 500 feet deep. In O'Hara Township, J. S. Wally and others are drilling at 1,600 feet in a test on the Margaret Clause farm.

In Greene County, the Richhill Oil & Gas Co. resumed drilling its test on the P. W. Gribben farm and has reached 1,680 feet. It is in Richhill Township.

In Washington County, several new tests have started. One mile south of East Findley, the Natural Gas Co. of West Virginia is building a rig for a test on the Harley Ealy farm. In South Franklin Township, near Point Lookout, F. K. Fawcett and others are drilling a test on the Frank Caton farm. The Pittsburgh Coal was at 782 feet, and the Little Dunkard sand 1,115-1,137 feet. It is now drilling at 1,143 feet. In Morris Township, James McCracken & Co. are rigging up to drill a test on the H. B. Saunders farm. In East Findley Township, the Natural Gas Co. of West Virginia, having found the Gordon Stray sand dry in drilling deeper its No. 1 on the Sarah Carter farm, is drilling to the Fifth sand. Same company's No. 3 on this farm is drilling at 450 feet and offsets the fair producer on the J. N. Clutter farm, which is still making about 150 bbls. a day.

In Amwell Township, Washington County, Raymond Orrill is building a rig for No. 3 on the G. L. Walker farm. The Manufacturers Light & Heat Co. is down 930 feet in a test on the C. A. Miles farm. The Pittsburgh Coal was at 731 feet. The Wise Oil & Gas Co. is drilling out the cement after a cave at 1,080 feet in its test on the Eliza Roach farm. The Carnegie Natural Gas Co. drilled deeper its test on the Fred Baumberger farm and it is now below 2,100 feet. The top of the Big Injun was at 1,965 feet with about 12,000 feet of gas a day showing at 2,035 feet. The same company's test on the C. W. Dunn farm is drilling in the Injun sand at 1,905 feet. On the John C. Murphy farm its test is drililng below 2,100 feet.

PETROLEUM CHEMISTS

The members of the Bartlesville petroleum group, Oklahoma section, American Chemical Society, will meet at Bartlesville, Okla., Saturday, February 6, at 6:30 p.m. in the Doherty Men's Fraternity room on the first floor of the Empire Building, corner of Dewey Avenue and Third Street. The program, preceded by a buffet dinner, will include the following papers: "Reminiscences of a Petroleum Chemist," by N. A. C. Smith, supervising engineer; "Chemical Problems Relating to the Production of Petroleum," by Ludwig Schmidt, petroleum engineer; "Some Remarks on the Less Volatile Constituents of Petroleum," by H. M. Smith, associate petroleum chemist, all members of the Petroleum Experiment Station of the Bureau of Mines at Bartlesville.

JAMES E. HOOVER DIES

James E. Hoover, 38, secretary-treasurer and geologist for Bryan Petroleum Co., died last week at his home in Tulsa. He was a member of the Petroleum Club and the American Association of Petroleum Geologists.

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HOUSTON, TEXAS

Southwest Texas Fields

(Continued from Page 50)

to sidetrack again. It is one of two tests that were to get the Edwards deep.

Bexar Petroleum Corp.'s No. 1 Houston, in central Wilson County, another deep test to Edwards, got the Edwards the past week at 5,211 feet and normal, with a trace of oil, but lost drill stem in the hole while trying to test.

This test ran low on the chalk to which formation it was carried by the Humble Oil & Refining Co. and ran high on formations below the chalk till the Del Rio and Georgetown thickened which made it run normal with the No. 1 Hardy, 2 miles northeast, on the Edwards. There is pronounced surface fault in that part of the county and only two tests have gone to the Edwards, the No. 1 Hardy and No. 1 Houston, and hence no other logs to serve as guides. It seems probable that the district will not be abandoned as it is still classed as a good prospect for a deep Edwards lime pool.

In the shallower area farther north two new wildcats joined the Balcones fault activity the past week. Humble is starting the No. 1 Woodward within 650 feet of the north line of Frio County where the company has a block of considerable size and Trinity Drillers are to drill the No. 1 A. B. Ball in the L. H. Peters Survey in Guadalupe County a few miles southeast of Seguin.

Gulf Coast Fields

(Continued from Page 47)

producer of the field. Pure's No. 1 Isaac Weaver, temporarily abandoned since last October at 6,181 feet, is being rigged up to deepen. No. 1 Wilder, which has gone to a total depth of 7,614 feet, has drill stem stuck at 6,800 feet. The status of the others is unchanged.

Goose Creek

The showing which has been made by Gulf Production Co.'s No. 17 Tabbs fee at Goose Creek, since its completion several weeks ago in a new deep sand at 4,502 feet has revived interest in further production possibilities there. The Gulf well, an old producer deepened, still is flowing at the rate of around 500 bbls. daily. In the meantime Sun Oil Co. has started an offset, No. 9 Wright, 36 feet from the north line and 50 feet from the east line of the lease, William Scott Survey. This is approximately 300 feet east of the Gulf well. Gulf is rigging up for No. 13 Tabbs fee, which is between No. 17 Tabbs fee and the Sun Oil Co. test.

Two other tests, both in semiwildcat territory, are drilling at Goose Creek. H. J. DeArman's No. 1 G. Adey, which went to a total depth of 5,301 feet, has been plugged to 4,200 feet. Anderson and others' No. 1 Harrell, 300 feet west of the DeArman well, is drilling below 3,550 feet.

Shocks of Earthquake on Steel Tankage Studied

Principles of design used in American Petroleum Institute oil tank specifications are entirely adequate for earthquake resistance, though minor changes in details and workmanship might be advisable, in the opinion of members of the California district subcommittee on tanks who have completed an exhaustive study. The report of the committee on its study of the effects of the earthquake of last March has been sent out by C. A. Young, secretary of the Division of Production, to all members of the tank committee, along with a score of photographic illustrations of damage wrought to some of the tanks. The report is made an exhibit of Standardization Bulletin No. 109, which is being issued in mimeographed form for all members of the Division of Production and standardization committees.

The survey made by the California committee disclosed the fact that while there were thousands of tanks in the earthquake area, there were only four instances of actual shell failure. A large amount of the damage resulting from the earthquake was to tank roofs, and seam leaks were frequent. The report ascribes losses of tank contents principally to ruptured tank connections. Where the soil was alluvial, or in places where ground had been filled, the committee noted a general condition of settled tanks generally from one-half to 4 inches in depth.

Mr. Young also announced the resignation of C. J. Nobmann from the tank committee because of the press of other duties, and the appointment of W. M. Giffen, Shell Oil Co., San Francisco, as his successor, both as a member of the engineering subcommittee and as chairman of the California district subcommittee.

Revisions of Riveted Tank Specification (A.P.I. Stds. 12-A) previously adopted, and changes approved at the annual meeting in Chicago last October, committeemen were advised, will be incorporated in a revised (fourth) edition to be sent soon to members, licensees and handbook owners.

A.P.I. TO MOVE

NEW YORK, Jan. 29.—The American Petroleum Institute has leased about half of the twentieth floor in the R.C.A. Building at Rockefeller Center, and will move from 250 Park Avenue about March 1.

Wildcat Operations in Gulf Coast

(Continued from Page 47)

Sun Oil Co.'s No. 14 J. Wilburn (W.O.), Henry Hodges Sur. ... Comp. 590 bbls.; ⅝-in. choke, 225 lbs.; T.D. 5,162 ft.

Sun Oil Co.'s No. 17 J. Wilburn, Henry Griffith League, 150 ft. W of No. 6 and 50 ft. S of N line. ... Tested S.W. 3,772 ft.; pulling screen.

Sun Oil Co.'s No. 18 J. Wilburn, Henry Griffith League, 50 ft. N of S line, 50 ft. E of W line of lease ... Coring oil sand 4,514 ft.

Sun Oil Co.'s No. 19 J. Wilburn, 220 ft. E of W line, 343 ft. S of N line, Wm. Hodges Sur. ... Derrick.

Sun Oil Co.'s No. 20 J. Wilburn, Wm. Hodges Sur., 60 ft. E of W line, 343 ft. S of N line ... Sand and boulders 973 ft.; cmtd. csg.

Sun Oil Co.'s No. 4 Higgins, Wm. Hodges Sur., 100 ft. W of No. 2 ... Cmtd. 24-in. pipe 50 ft.

Texas Co.'s No. 8 Wilburn (W.O.), Henry Griffith League ... T.D. 5,195 ft.; milling out sidetrack 4,828 ft.

Texas Gulf Prod. Co.'s No. 12-B Kirby, Henry Griffith League, 80 ft. S of N line and direct offset of Texas Gulf's No. 2 J. M. Fitzgerald ... Rigging.

Texas Gulf Prod. Co.'s No. 8-H Kirby, 333 ft. W of No. 6-H, 70 ft. N of S line, Henry Griffith League (W.O.) ... T.D. 5,024 ft.; sidetracked at 3,179 ft.; drlg. shale 4,591 ft.

Texas Gulf Prod. Co.'s No. 4 Wilburn, Wm. Hodges Sur., 330 ft. N of S line, 50 ft. W of E line ... Drlg. rock 1,308 ft.

Yount Lee Oil Co.'s No. 23 Chambers County, Wm. Bloodgood Sur., 116.9 ft. S of N line and 247 ft. W of E line ... Rig.

Yount Lee Oil Co.'s No. 7 Phillips, offset Sun Oil Co.'s No. 18 Wilburn ... Drlg. salt 1,423 ft.

Yount Lee Oil Co.'s No. 8 Phillips, Wm. Hodges Sur. ... Derrick.

BIG CREEK—FORT BEND COUNTY

McPhail et al's No. 2 Wheat ... Standing 1,230 ft.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 38 Moore, James Frazier Sur., 380 ft. E, 100 ft. S of No. 31 ... Drlg. salt 3,497 ft.

RABBS RIDGE—FORT BEND COUNTY

Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 10-A George, J. Rabb Sur., E of No. 9-A ... Drlg. gumbo 1,935 ft.

Humble O. & R. Co.'s No. 19-B Lockwood & Sharp, J. Rabb Sur. ... Drlg. shale 5,129 ft.

Humble O. & R. Co.'s No. 20-B Lockwood & Sharp, J. Rabb Sur. ... Comp. 45 bbls. per hour; ⅝-in. choke, 5,310 ft.

Texas Co.'s No. 2 Sherman McCall, Samuel Kennedy Sur., 665 ft. N and 390 ft. W of SE cor. of lease ... Rig.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 2 Broussard-Orme, Martin Dunman Sur., 300 ft. S of No. 1-B Cade ... Abd. 5,705 ft.

Yount Lee Oil Co.'s No. 4 Broussard & Orme, M. Dunman Sur., 129 ft. SW of No. 3 ... Drlg. shale 1,525 ft.

Yount Lee Oil Co.'s No. 39 Cade, N. Fitzsimmons Sur., 1,000 ft. from W line, 580 ft. from S line of lease ... Rig.

Yount Lee Oil Co.'s No. 2-B Cade, 170 ft. from N line, 100 ft. from E line of 40-ac. lease, N. Fitzsimmons Sur. ... Drlg. shale and lime 3,620 ft.

Yount Lee Oil Co.'s No. 20 Smith, 1,210 ft. from W line, 1,790 ft. from N line of 200-ac. tract, Dunman Sur. ... Drlg. hard sand 4,622 ft.

Yount Lee Oil Co.'s No. 21 Smith, M. Dunman Sur., 360 ft. from W line, 1,485 ft. from N line of lease ... Spudded.

ARRIOLA—HARDIN COUNTY

Republic-Houston Oil Co.'s No. 6 Arriola fee, 2,150 ft. S of N line, 5,050 ft. E of W line of lease, Arriola Sur. ... No report.

BATSON—HARDIN COUNTY

Danciger O. & R. Co.'s No. 3 Hooks, W. Donoho Sur., 330 ft. E of CWL, Blk. 24 ... No report.

BARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 105 Jordit fee, 50 ft. due N of No. 94 ... T.D 927 ft.; set screen 917 ft.; rigging up to pump.

Rio Bravo Oil Co.'s No. 105-A Jorcit (same derrick floor as No. 105) ... Set screen 817 ft.; rigging up to pump.

Seismo Oil Co.'s No. 1 Casewell, 940 ft. S of NW cor. and 600 ft. from E line, H.B.B.&C. Sur. ... No report.

SOUR LAKE—HARDIN COUNTY

Arlis Pet. Co.'s No. 1 Sour Lake Bank, H.&T.C. Sur., NW cor. Blk. 11, Sec. 69 ... Drlg. shale 5,000 ft.

GOOSE CREEK—HARRIS COUNTY

Anderson et al's No. 1 Harral, Wm. Scott Sur., 600 ft. W and N from Humble's No. 1 Harral ... Drlg. sandy shale 3,512 ft.

H. J. DeArman's No. 1 G. Adey, Wm. Scott Sur., 505 ft. from W line, 130 ft. from S line of lease ... T.D. 5,301 ft.; P.B. to 4,200 ft.

Sun Oil Co.'s No. 9 Wright, Wm. Scott Sur., 36 ft. from N line, 50 ft. from E line of lease ... Rig.

HUMBLE—HARRIS COUNTY

Texas Co.'s No. 40 Stevenson (W.O.) ... T.D. 3,134 ft.; sidetracked 2,622-2,882 ft.; pumped 21 bbls. oil in 13 hrs.

PIERCE JUNCTION—HARRIS COUNTY

Harrison & Abercrombie's No. 4 Ritter, J. Hamilton Sur., 50 ft. W of No. 3 ... Set 42 ft. of screen 4,706 ft.; swabbing.

Rio Bravo Oil Co.'s No. 16-A Settegast, 620 ft. W, 329 ft. N, SE cor. J. Kopman Sur. (W.O.) ... Set screen 4,393 ft.; comp. 246 bbls. in 24 hrs.

Rio Bravo Oil Co.'s No. 26-A Settegast, J. Kopman Sur. No. 44, 1,210 ft. N line, 750 ft. E line of "A" lease ... T.D. 5,843 ft.; to sidetrack to W.O.

TOMBALL—HARRIS COUNTY

Amerada Pet. Corp. and Stanolind O. & G. Co.'s No. 2 Nelson, Joseph House Sur. ... Drlg. shale 1,110 ft.

Humble O. & R. Co.'s No. 1-A Brautigan, J. Edwards Sur., 500 ft. from S line, 500 ft. from E line of lease. Coring 5,115 ft.

Humble O. & R. Co.'s No. 1 F. J. Holderrith, C. N. Pillot Sur., 466 ft. out of SW cor. ... Coring shale 5,545 ft.

Humble O. & R. Co.'s No. 2 Emil Doege, C. Goodrich Sur., 300 ft. from E line, 466 ft. from S line of 90 acres ... Derrick.

Humble O. & R. Co.'s No. 1 W. Hoffman, Joseph House Sur., 466 ft. W of E line of W. W. Baker tract and 318 ft. N of S line ... Rig.

Humble O. & R. Co.'s No. 1 Hempel, J. N. Hooper Sur., 500 ft. from E line, 466 ft. from S line of 105 acres. Drlg. shale 984 ft.

Humble O. & R. Co.'s No. 1 Phillip Holderith, C. N. Pillot Sur., 466 ft. out of SE cor. of 90 acres ... Derrick.

Humble O. & R. Co.'s No. 1 Moody, 466 ft. E, 466 ft. S of NW cor. 100-ac. tract, J. H. Edwards Sur. ... Sand 5,564-88 ft.; comp. 21 bbls. per hr.; ¼-in. choke.

Humble O. & R. Co.'s No. 2 L. B. Moody, J. H. Edwards Sur., 817 ft. S of No. 1 ... Derrick.

Humble O. & R. Co.'s No. 1-B Quilter, A. Senchal Sur., 2,100 ft. S of N line, 1,826 ft. E of W line of tract ... Drlg. shale 1,105 ft.

Humble O. & R. Co.'s No. 1 Schearer, 466 ft. S line, midway E and W of 56-ac. tract, C. Goodrich Sur. ... Comp. 25 bbls. per hour; ¼-in. choke, 5,588 ft.

Humble O. & R. Co.'s No. 1 Weindorf, 435 ft. W line, 500 ft. from S line of lease, C. Goodrich Sur. ... Comp. 27 bbls. per hour; ¼-in. choke, 5,576 ft.

Skelly Oil Co.'s No. 1 Schultz, J. H. Edwards Sur., 456 ft. from S line, 404 ft. from E and W lines ... Derrick.

Standard O. & G. Co.'s No. 1 Brautigan, 466 ft. from N line and 575 ft. from E and W lines of tract, N. Anderson Sur. ... Cored S.W. sand 5,661-90 ft.

Texas Co.'s No. 3 E. Mueller, 658 ft. W and 1,889 ft. N of SE cor. of tract ... Comp. 30 bbls. per hr.; 12/64-in. choke, 5,578 ft.

ESPERSON—LIBERTY COUNTY

General Crude Oil Co.'s No. 7 Davis (W.O.), Duncan Sur. T.D. 7,510 ft.; washing 6,873 ft.

General Crude Oil Co.'s No. 18 Esperson, C. W. Fisher Sur., 400 ft. S of No. 7 (W.O.) ... No report.

HULL—LIBERTY COUNTY

Gulf Prod. Co.'s No. 1 Bregga, 50 ft. each way from NE cor. of lease, J. Devore Sur. ... Comp. 18 bbls. per hour; ¼-in. choke, 4,932 ft.

Gulf Prod. Co.'s No. 95 Phoenix, Jesse Devore Sur. ... Drlg. sticky shale 3,278 ft.

Houston Prod. Co.'s No. 4 Orgain, Jesse Devore Sur., 130 ft. from N line, 50 ft. from E line of lease ... Drlg. shale 4,395 ft.

Houston Prod. Co.'s No. 5 Orgain, Jesse Devore Sur., 100 ft. S of No. 4 ... Derrick.

Humble O. & R. Co.'s No. 34 Hooks-Guedry, Jesse Devore Sur., 443 ft. from W line, 50 ft. from S line of lease ... Drlg. shale 3,772 ft.

Humble O. & R. Co.'s No. 13 Hooks-Spell, Jesse Devore Sur., 50 ft. from S line, 150 ft. from E line of lease ... Drlg. shale 3,855 ft.

Miramar Oil Corp.'s No. 7-A Phoenix, Jesse Devore Sur., 50 ft. from W line, 80 ft. from S line of 25 acres ... Drlg. shale 3,815 ft.

Miramar Oil Corp.'s No. 3-B Phoenix, Jesse Devore Sur., 50 ft. from N line, 250 ft. from W line of lease ... Derrick.

Sun Oil Co.'s No. 2-A Carr, 197 ft. W of No. 1, Jesse Devore Sur. ... No report.

Sun Oil Co.'s No. 3-A Carr, Jesse Devore Sur., 196 ft. W of No. 2-A Carr ... Drlg. gumbo 563 ft.

Republic Prod. Co.'s No. 150 Dolbear, J. Devore Sur., 250 ft. E of No. 81 ... Drlg. shale 3,256 ft.

Texas Co.'s No. 5 Barrow fee, J. Devore Sur., 533 ft. S, 150 ft. W of NE cor. of lease ... Pulling screen to deepen 4,955 ft.

Texas Co.'s No. 6 Barrow fee, 333 ft. S, 150 ft. W from NE cor. of tract, Jesse Devore Sur. ... Derrick.

Yount Lee Oil Co.'s No. 8 Hooks fee, Jesse Devore Sur., 150 ft. from NW line, 150 ft. from SW line of 5-ac. lease ... Drlg. shale 3,775 ft.

CONROE—MONTGOMERY COUNTY

Alpha Pet. Co.'s No. 2 South Tex. Dev. Co., W. A. McGowen Sur., 248 ft. S line, 480 ft. W line ..... Comp. 40 bbls. per hour; ½-in. choke, 5,178 ft.

American Liberty Oil Co.'s No. 1-C Harris Est., J. Davis Sur., 330 ft. from S line, 343 ft. from E line of lease ..... Drlg. shale 2,620 ft.

Feltex Oil Co.'s No. 1-B South Tex. Dev., L. Smith Sur., 571 ft. W line, 467 ft. S line of tract ..... T.D. 5,107 ft.; cmtd. csg.

Gulf Coast Drlg. & Prod. Co.'s No. 15-A Keystone Mills, A. James Sur., 350 ft. W of No. 14 ..... Comp. 40 bbls. per hour; ½-in. choke, 5,132 ft.

Gulf Coast Drlg. & Prod. Co.'s No. 20-A Keystone Mills, A. S. James Sur. ..... Drlg. shale 4,354 ft.

Humble O. & R. Co.'s No. 4 Am. Nat., Wilson Strickland Sur. ..... Drlg. shale 3,733 ft.

Humble Oil & Ref. Co.'s No. 20 Keystone Mills, A. Steele Sur., 793 ft. W of No. 19 ..... Drlg. shale 3,394 ft.

Humble O. & R. Co.'s No. 33 Keystone Mills, A. Steele Sur., 1,200 ft. from E line, 750 ft. from S line of lease ..... Derrick.

Humble O. & R. Co.'s No. 15 Madeley, Ransom House Sur., 978 ft. SW of No. 7 and 869 ft. NE of No. 5 .. Spudded.

Humble O. & R. Co.'s No. 16 Madeley, Ransom House Sur. ..... Drlg. shale 198 ft.

Humble O & R. Co.'s No. 17 Madeley, Ransom House Sur. ..... Comp. 81 bbls. per hour; ½-in. choke, 5,136 ft.

Humble O. & R. Co.'s No. 38 Madeley, Ransom House Sur. ..... Comp. 80 bbls. per hour; ½-in. choke, 5,131 ft.

Humble O. & R. Co.'s No. 10 Emory, W.C.R.R. Sur. .... T.D. 5,160 ft.; cmtd. csg.

Humble O. & R. Co.'s No. 45 Moore, L. Smith Sur., 842 ft. E of No. 46 ..... Comp. 84 bbls. per hour; ½-in. choke, 5,124 ft.

Humble O. & R. Co.'s No. 3 A. Morehead, Trevathan Sur.. Drlg. sand 1,102 ft.

Humble O. & R. Co.'s No. 56 So. Tex. Dev., T. Slade Sur., 933 ft. E of No. 54 ..... Comp. 84 bbls. per hour; ½-in. choke, 5,135 ft.

Humble O. & R. Co.'s No. 60 South Tex. Dev. Co., T. Slade Sur. ..... Comp. 61 bbls. per hour; ½-in. choke, 5,171 ft.

Humble O & R. Co.'s No. 5-C South Tex. Dev. Co., T Slade Sur., 700 ft. SW of No. 4-C ..... T.D. 5,174 ft.; cmtd. csg.

Humble O. & R. Co.'s No. 5-D South Tex. Dev., T. &N.O. Sur., 700 ft. E of No. 4-D ..... Drlg. shale 5,070 ft.

Pine Tree Oil Co.'s No. 1 South Tex. Dev. Co., T.&N. O. Sur. No. 13, 1,600 ft. W line, 810 ft. S line of Sur. Shut in 5,105 ft.

Strake Pet., Inc.'s No. 5 Etheridge, Stephen Bryan Sur., 712 ft. W of No. 2 ..... Comp. 90 bbls. per hr.; 5,123 ft.

Strake Pet., Inc.'s No. 6 Etheridge, S. H. Bryan Sur., 712 ft. W of No. 5 ..... Derrick.

Sun Oil Co.'s No. 10 Keystone Mills, A. Steele Sur .... Drlg. shale 4,969 ft.

Texas Co.'s No. 23 Moody, Ransom House Sur., 1,332 ft. N 75° E and S 15° E 162 ft. from lower NW cor. of lease ..... Rig.

Tide Water Oil Co.'s No. 3 American Natl. Bank, Wilson Strickland Sur. ..... Fishing bit 730 ft.

Tide Water Oil Co.'s No. 4 Amer. Natl. Bank, 200 ft. S, 466 ft. E line of tract, W. Strickland Sur. ..... Comp. 60 bbls. per hour; ½-in. choke, 5,092 ft.

Tide Water Oil Co.'s No. 14 Dean, 330 ft. N line and 1,650 ft. from W line of lease ..... Comp. 88 bbls. per hour; ½-in. choke, 5,103 ft.

Tide Water Oil Co.'s No. 35-A Lewis, C. B. Stewart Sur., 1,596 ft. W of E line, 4,985 ft. N of S line of lease ..... Rigging.

Tide Water Oil Co.'s No. 32-B Lewis, C. B. Stewart Sur., 1,788 ft. W of E line, 1,497 ft. N of S line of lease ..... Derrick.

Tide Water-Republic's No. 9 South Tex. Dev. Co., 467 ft. from W line, 1,533 ft. from N line of tract, T.&N.O. Sur. No. 5 ..... T.D. 5,097 ft.; cmtd. 7-in. csg. 5,080 ft.

PORT NECHES—ORANGE COUNTY

Texas Co.'s No. 2 Orange Natl. Bank, Jacob Beaumont Sur., 1,538 ft. W and 200 ft. S of NE cor. of lease ... Derrick.

Texas Co.'s No. 2-B Polk, 695 ft. N, 150 ft. S of NE cor. of N. Jacob Beaumont Sur. ..... Coring sand and shale 4,902 ft.

LIVINGSTON—POLK COUNTY

Vick Borsodi et al's No. 1 West, E 3½ acres of 35 acres, Roberts tract A. Viesca Sur. ..... T.D. 4,370 ft.; P.B. to 4,356 ft.

Polk County Oil Co.'s No. 3 Allen, Hibarger, A. Viesca Sur., 330 ft. E of W line, 464 ft. N of S line of tract ..... Coring sandy shale 4,344 ft.

Gist Oil Co.'s No. 1 Kingsbury County Holding Corp., A. Viesca Sur., 150 ft. N at R/A and 193 ft. E along S line of tract ..... Set 40 ft. of screen and 60 ft. of blank 4,242 ft.; gauge 1,100 lbs. working gas pressure; shut in with pressure of 1,900 lbs.

GRETA—REFUGIO COUNTY

Atlantic Oil Prod. Co. et al's No. 5-A J. J. O'Brien, 933 ft. E of No. 3-A, 466 ft. S of N line ..... Drlg. shale 5,075 ft.

Atlantic Oil Prod. Co.'s No. 2-B J. J. O'Brien, 466 ft. each way from SE cor. of 50-ac. lease, N. S. Crunk Sur. ..... Comp. 148 bbls. per day; 5/32-in. choke, 4,395 ft.

Blanco Oil Co.'s No. 3-A J. J. O'Brien, N. S. Crunk Sur. ..... Comp. producer, 4,400 ft.; no gauge.

Blanco Oil Co.'s No. 4-A J. J. O'Brien, M. J. Ximines Sur., 466 ft. from N line, 910 ft. from E line of 107-ac. lease ..... Derrick.

Dash Prod. Co.'s No. 2-E O'Brien, N. S. Crunk Sur., 466 ft. N of SE line, center E and W of tract .... Comp. producer, 4,395 ft.; no gauge.

Floboots Oil Corp.'s No. 1 M. C. Bauer, 330 ft. N line, 1,724 ft. from W line, J. M. Ximines Sur. ..... Tested S.W. 3,493 ft.; D.D.

Humble O. & R. Co.'s No. 3 Fannie Heard, 825 ft. E of most northerly NW cor. of lease and 466 ft. S of most northerly line at R/A, N. S. Crunk Sur... Rig.

Humble Oil & Ref. Co.'s No. 3 Fannie Heard, 825 ft. E of most northerly NW cor. and 466 ft. S of most northerly line at R/A ..... Rig.

Humble O. & R. Co.'s No. 1 Wilder, 466 ft. S line, 313 ft. E line, J. T. McGrew Sur. ..... T.D. 2,280 ft.; blew out; killed.

Edwin M. Jones' No. 5-A J. M. O'Brien, N. S. Crunk Sur., 933 ft. E of No. 4 ..... Comp. 86 bbls.; 24 hrs.; 9/64-in. choke, 4,392 ft.

Edwin M. Jones' No. 6-A O'Brien, N. S. Crunk Sur., 1,399 ft. from E line, 466 ft. from S line of tract..... Rig.

Edwin M. Jones' No. 7-A O'Brien, N. S. Crunk Sur. .. Derrick.

Edwin M. Jones' No. 8-A O'Brien, N. S. Crunk Sur., 466 ft. W of E line, 1,629 ft. N of S line of lease.. Set screen 4,392 ft.

Nesral Oil Co.'s No. 1 Ira Heard, M. J. Ximines Sur., 330 ft. out of NW cor. of 25-ac. tract ..... T.D. 6,737 ft.; P.B. to 2,100 ft.; to comp. as gas well.

Nesral Oil Co.'s No. 1 V. E. Heard, 466 ft. N line, 466 ft. W line, M. J. Ximines Sur. ..... T.D. 6,010 ft.; setting whipstock to sidetrack; 4,700 ft.

Nesral Oil Co.'s No. 2 W. Heard, 710 ft. W line, 1,510 ft. N line of lease, M. J. Ximines Sur. ..... Drlg. sand 3,818 ft.

Stanolind O. & G. Co.'s No. 1 J. M. O'Brien (Blk. 11), E. H. Winfield Sur., 500 ft. from E line, 466 ft. from S line ..... Comp. 50 bbls. in 4 hrs.; ¼-in. choke, 4,383 ft.

Stanolind O. & G. Co.'s No. 1 J. M. O'Brien (Blk. 13), E. H. Winfield Sur., 466 ft. from S line, 500 ft. from E line ..... Comp. 5 bbls. per hr.; ¼-in. choke, 4,400 ft.

Trinity Drillers' No. 1 Welder, J. T. McGrew Sur., 466 ft. from S and W lines, J. F. Welder 200-ac. tract. Abd. in shale 6,009 ft.

United Prod. Co.'s No. 12 Fox, 1,450 ft. NW of No. 11, Hews & Brown Sur. ..... Sand 3,492-3,507 ft.; comp. gas well; tubing pressure 100 lbs.; csg. pressure 300 lbs.

United Prod. Co.'s No. 6 Lambert, C. S. Hardwick Sur., Blk. 2, 2,466 ft. from N line, 506 ft. from E line... Drlg. gumbo 4,165 ft.

CLAY CREEK—WASHINGTON COUNTY

M. O. N. T. Oil Co.'s No. 1 Giddings ..... No report.

Sun Oil Co.'s No. 8 Janner, J. W. Cerry Sur., 300 ft. SE of No. 7, 150 ft. SW of the creek ..... Drlg. sandy shale 142 ft.

Sun Oil Co.'s No. 3 Schermer, N. Clay Sur., 330 ft. NW, 330 ft. SW line of lease ..... Drlg. sandy shale 2,282 ft.

SOUTH LOUISIANA FIELDS

CAMERON MEADOWS—CAMERON PARISH

Burton-Sutton Oil Co.'s No. 3 School Land, 155 ft. N and 2,974 ft. E of SW cor. of Sec. 16-14s-13w ..... Rig.

Humble O. & R. Co.'s No. 4 Cameron Meadows, 360 ft. N, 600 ft. W, SE cor. Sec. 21-14s-13w ..... Drlg. lime 7,103 ft.

Humble O. & R. Co.'s No. 5 Cameron Meadows, 2,260 ft. W, 28 ft. S of NE cor. Sec. 21-14s-14w..... Rig.

EDGERLY—CALCASIEU PARISH

S. A. Emerson's No. 13 Hunter, 465 ft. N, 90 ft. E, SW cor. Sec. 21-9s-11w (W.O.) ..... Rig up to W.O. 4,118 ft.

Union Sulphur Co.'s No. 1 Hunter, 210 ft. E, 1,360 ft. N of SW cor. SE Sec. 21-9s-11w ..... Drlg. 4,410 ft.

Yount Lee Oil Co.'s No. 1 Sulphur Mining Co., 150 ft. S, 300 ft. W, NE cor. Sec. 33-9s-11w ..... Drlg. shale 7,453 ft.

CHOCTAW—IBERVILLE PARISH

Standard Oil Co. of La.'s No. 4 Gay, 2,350 ft. S, 175 ft. E of NE cor. Sec. 52-9s-11e ..... Derrick.

GARDEN ISLAND—PLAQUEMINES PARISH

Texas Co.'s No. 10 Garden Island ..... T.D. 1,875 ft.

GUEYDAN—VERMILLION PARISH

Pure Oil Co.'s No. 6 Alliance Trust, 667 ft. E, 1,787 ft. S line of lease, Sec. 34-11s-1w..... Drlg. sand 1,462 ft.

Pure Oil Co.'s No. 5 Mulvey, 500 ft. from No. 2 Mulvey, in line with Nos. 1 and 2 ..... Coring sand 4,961 ft.

HACKBERRY—CAMERON PARISH

Wilford Lahay et al's No. 1 Roux (W.O.) ..... S.D. 3,956 ft.

Red Kelly Oil Co.'s No. 1 Duhon, 200 ft. S, 500 ft. E, NW cor. Sec. 27-12s-10w ..... Rig standing.

Texas Co.'s No. 11-B State ..... Drlg. 2,212 ft.

Union Sulphur Co.'s No. 1 Barber est., 1,720 ft. N line, 320 ft. E of SW cor. Sec. 12-12s-10w..... Sand 7,590-96 ft.; cmtd. 6⅝-in. csg.; drilled plug.

IOWA—CALCASIEU AND JEFF DAVIS PARISHES

Barnsdall Oil Co.'s No. 2 Fontenot, 990 ft. N and 330 ft. E of SW cor. of Sec. 7-9s-6w ..... Rig.

Magnolia Pet. Co.'s No. 5 Waite, 660 ft. E, 300 ft. N, SW cor. SE Sec. 12-9s-7w ..... Comp. 840 bbls.; 15/64-in. choke; tubing pressure 650 lbs.; csg. pressure 1,410 lbs.; 6,970 ft.

Shell Pet. Corp.'s No. 1 Arcoin, 330 ft. out of NW cor. 30-ac. tract, Sec. 7-9s-6w ..... Drlg. sandy shale 6,511 ft.

Shell Pet. Corp.'s No. 1 Johnson, 265 ft. S, 330 ft. E of NW cor. SW Sec. 18-9s-6w ..... T.D. 6,804 ft.; D.S. test 6,777 ft.; flowing; no gauge; tubing pressure 1,000 lbs.; csg. pressure 1,050 lbs.

Shell Pet. Corp.'s No. 5 A. D. Fontenot, 330 ft. out of SE cor. W½ SW Sec. 7-9s-6w ..... Drlg. shale 1,319 ft.

Shell Pet. Corp.'s No. 1 C. Le Blew, 660 ft. W, 330 ft. N of SE cor. of lease ..... S.D. 6,527 ft.

JENNINGS—ACADIA PARISH

Yount Lee Oil Co.'s No. 13 Housslere-Latrielle, Sec. 47-9s-2w, 300 ft E of No. 12 ..... Drlg. shale 7,095 ft.

LAKE BARRE—TERREBONNE PARISH

Texas Co.'s No. 10 L.L.&E., 4,543 ft. S, 503 ft. W of NW cor. Sec. 30-21s-20 ..... Drlg. gumbo 1,250 ft.

Texas Co.'s No. 22 State-Lake Barre, 150 ft. northerly from No. 18 ..... Drlg. hard sand 6,320 ft.

Texas Co.'s No. 20 State-Lake Barre, 392 ft. northerly from No. 22, Sec. 30-21s-20e ..... Drlg. gumbo 635 ft.

LEESVILLE—LAFOURCHE PARISH

Gulf Ref. Co.'s No. 1 Community, Blk. C, 151 ft. N of S line, 100 ft. E of E bank of Bayou La Fourche, Sec. 23-21s-22e ..... S.D. 5,572 ft.

Gulf Ref. Co.'s No. 1 Community, Blk. E, 151 ft. N of S line, 150 ft. E of E bank of Bayou La Fourche, Sec. 23-21s-22e ..... Derrick.

Gulf Ref. Co.'s No. 1 Le Fort, 100 ft. N of S line, 100 ft. W of N bank of Bayou La Fourche, Sec. 23-21s-22e ..... Drlg. hard sandy lime and shale 6,531 ft.

Hellis et al's No. 1 State-Bayou Lafourche, 315 ft. N along W side of bayou at R/A, 96 ft. E at R/A from SE cor. Lot 3, Sec. 26-21s-22 ..... No report.

Texas Co.'s No. 8 L.L.&E., 2,321 ft. due S, 450 ft. W from NE cor. Sec. 27-21s-22e ..... Drlg. shale 4,216 ft.

Texas Co.'s No. 10 L.L.&E., 2,500 ft. due S, 375 ft. due W of NE cor. Sec. 27-21s-22e ..... Salt 3,884-96 ft.

R. Y. Walker's No. 1 State-Bayou Lafourche, 930 ft. N along W line of Lot 6 from SW cor. section, thence 430 ft. at R/A, Sec. 26-21s-22 ..... No report.

LOCKPORT—CALCASIEU PARISH

Magnolia Pet. Co.'s No. 7 Farquaher, 330 ft. S, 174 ft. W of NE cor. SW NE Sec. 3-10s-9w ..... No report.

Magnolia Pet. Co.'s No. 11 Bordages, 660 ft. N, 490 ft. W of SE cor. NE NE Sec. 3-10s-9w ..... Drlg. sandy shale 6,554 ft.

Magnolia Pet. Co.'s No. 4-A Watkins fee, 685 ft. E, 200 ft. N of SW cor. NW NE Sec. 3-10s-9w..... Sand 6,875-90 ft.; swabbing.

Union Sulphur Co.'s No. 1 Farquaher, 200 ft. S and W lines, NE cor. SW SE Sec. 36-12s-10w, 2-ac. tract ....Drlg. shale 6,797 ft.

Union Sulphur Co.'s No. 2 Moss (W.O.), 350 ft. S, 210 ft. W of NE cor. NW SE ..... Drlg. shale 5,450 ft.

PORT BARRE—ST. LANDRY PARISH

Gulf Ref. Co.'s No. 5 Wilson-Cockran, 600 ft. N, 910 ft. E of No. 2, Sec. 4-6s-5e ..... Drlg. hard sand and lime 3,773 ft.

Texas Co.'s No. 17 Botney Bay, 1,800 ft. S 8 deg. W, 600 ft. N 32 deg. most southern NE 560 deg. tract, Sec. 4-6s-5e ..... Derrick.

Texas Co.'s No. 19 Botney Bay ..... Drlg. shale 2,410 ft.

Texas Co.'s No. 1 Perkins, 2,501 ft. S, 1,003 ft. E of NW cor. Sec. 21-6s-5e ..... Drlg. lime 4,102 ft.

SORRENTO—ASCENSION PARISH

Union Sulphur Co.'s No. 2 Lacy White Frank, 1,175 ft. N, 1,615 ft. W of SE cor. Sec. 16-10s-4e ..... Drlg. shale 5,249 ft.

Union Sulphur Co.'s No. 25 United Land ..... Drlg. shale 5,695 ft.

STARKS—CALCASIEU PARISH

Union Sulphur Co.'s No. 4 Industrial Lbr. Co., 2,254 ft. from W, 2,116 ft. from S line, NE cor. Sec. 30-9s12w. Sand and boulders 3,601 ft.; cmtd. csg.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 787 fee, 119 ft. from N line, 1,632 ft. from W line of C Sec. 29-9s-10w..... Comp. flowing 1,500 bbls.; ½-in. choke, 4,923 ft.

Union Sulphur Co.'s No. 788 fee, 602 ft. S, 1,209 ft. W of C Sec. 29-9s-10w ..... Set screen 5,128 ft.; failed to flow.

Union Sulphur Co.'s No. 789 fee, 1,653 ft. N, 795 ft. E, C, Sec. 29-9s-10w ..... Comp. 300 bbls.; ½-in. choke, 3,085 ft.

Union Sulphur Co.'s No. 790 fee, 929 ft. S and 802 ft. W of center of Sec. 29-9s-10w ..... Drlg. shale 3,020 ft.

Union Sulphur Co.'s No. 744 fee, 2 ft. S and 34 ft. W, C Sec. 29-9s-10w (O.W.) ..... No report.

Union Sulphur Co.'s No. 791 fee, 539 ft. N, 907 ft. E of SW cor. Sec. 33-10s-12w ..... Drlg. 1,625 ft.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 12 Yount Lee fee, 800 ft. S of No. 11, in line with Nos. 9 and 11, Sec. 12-13-3w..... Drlg. sandy shale 1,605 ft.

WHITE CASTLE—IBERVILLE PARISH

Shell Pet. Corp.'s No. 3 Wilbert, 717 ft. N 60 deg. 30 min. E from SE of Lot 2 of Fractional Sec. 9, in Sec. 1-11s-12e ..... Drlg. sticky shale 2,717 ft.

VINTON—CALCASIEU PARISH

Gulf Prod. Co.'s No. 9 Gardner, 572 ft. E, 150 ft. N, of SW cor. SE NE Sec. 33-10s-12w ..... Drlg. sand 3,054 ft.

Marrs McLean's No. 16 Gray, 426 ft. N, 658 ft. E of SW cor. Sec. 33-10s-12w ..... D.S. test 1,788 ft.; no report.

Tri-Oil Co.'s No. 1 Matilda Gray, 38 ft. W, 35 ft. N. of SE cor. NE SW NE Sec. 33-9s-12w ..... Rig.

Wilson Broach Co.'s No. 13 Wilson strip, 50 ft. N and 907 ft. E of SW cor. of Sec. 33-10s-12w ..... **Rig.**

Union Sulphur Co.'s No. 1 Vincent ..... Drlg. shale 5,630 ft.

Wilson Broach's No. 14 Wilson Strip, 50 ft. N, 643 ft. E of SW cor. SE NE Sec. 33-10s-12w ..... Rig.

Vinton Pet. Co.'s No. 22 Vincent, 685 ft. N, 620 ft. E, of SW cor. Sec. 34-10s-12w, in Lot 116 ..... T.D. 2,774 ft.; sidetracked 1,919-2,043 ft.; cmtd. csg.

MISCELLANEOUS WILDCATS

TEXAS

AUSTIN COUNTY

Gem Oil Co. et al's No. 1 Klump, Steven F. Austin Sur., No. 4 League, 345 ft. from N cor. of S. D. Bostwick Sur., Abst. 18, in fork of Mill Creek ..... Drlg. shale 1,612 ft.

Tibbetts et al's No. 1 Heideman, 4,320 ft. W along N line from NE cor. of A. Larson Sur. in J. Cooper Sur., thence 416 ft. N at R/A ..... S.D. 1,400 ft.

R. R. Mitchell's No. 1 H. Schierda, J. F. Fitzgibbons Sur., 300 ft. out NE cor. 96-ac. tract ..... Location.

BRAZORIA COUNTY

Danciger O. & R. Co.'s No. 1 L. Williams, 700 ft. NE line, 726 ft. SE line of 180-ac. tract, W. C. Carson Sur. ..... T.D. 6,770 ft.; cmtd. 7⅝-in. csg. 6,734 ft.

Shell Pet. Corp.'s No. 2 Haury (Danbury), H.T.&B. R.R. Sur., 720 ft. SE of No. 1 Blakely-Winston ..... Drlg. brittle shale 3,846 ft.

BRAZOS COUNTY

H. Elliott et al's No. 1 W. F. Odom, near center of 379-ac. tract in SW cor. of Isack Curil Sur. ..... Cmtd. surface csg.

Liner et al's No. 1 Peters, 300 ft. SE line, 300 ft. SW line of E. V. Peter fee, G. Powell Sur. ..... Derrick.

F. H. Scott's No. 1 Klintworth, I. Curd Sur., 300 ft. from N line, 400 ft. from E line ..... T.D. 1,487 ft.; gas sand 1,393-1,420 ft.; preparing to resume drilling.

COLORADO COUNTY

Hughes-Patrick Oil Co.'s No. 1 Lake Side Irrigation. 1,500 ft. SE, 500 ft. NE NW cor. Patrick Reel Sur. .. **Standing 3,682 ft.**

Humble O. & R. Co.'s No. 1-A O. M. Powell, I.&G.N. Sur. No. 44, 150 ft. E of W line, 600 ft. N of S line of lease ..... Derrick.

FAYETTE COUNTY

Colorado Oil Corp., J. Winn Sur., 650 ft. NE of center of SW line of 63.8-ac. tract ..... T.D. 2,139 ft.; **standing.**

FORT BEND COUNTY

O'Connor Dome Oil Co.'s (was A. N. Phillips et al's) No. 1 Grigar, 2,150 varas E line, 1,550 varas N line, J. S. O'Connor Sur. ..... Shale and lime 3,787 ft.; S.D.

Quintana Oil Co.'s No. 1 Wood, O'Connell, Miller, S 87 deg. E, 13,000 ft. from SW cor. of lease ..... Dry and abd. 6,295 ft.

J. P. White's No. 1 Wing, B. Osborne Sur., 2,000 ft. from N, 4,000 ft. from E line of tract ..... Standing 750 ft.

GRIMES COUNTY

Clark & Dodd's No. 1 Murry, 150 ft. W line, 300 ft. S line, Anderson Sur. ..... **Standing 715 ft.**

Cambrian Oil Co.'s No. 1 W. V. Sangster, John Moore Sur., 300 ft. out of most westerly NW cor. of 218-ac. tract ..... Derrick.

Foster et al's No. 1 Quinn, 7,100 ft. from W line, 3,900 ft. from N line of S. F. Austin Sur. ..... S.D. 3,825 ft.

Humble O. & R. Co.'s No. 1 Henderson, 750 ft. S, 700 ft. W at R/A of NE cor. of lease, G. W. Seaton Sur. ..... Drlg. shale 5,924 ft.

H. C. Ratcliff's No. 1 Fulgham, A. Tuttle Sur., 600 ft. N line, 540 ft. W line of lease ..... Derrick.

HARRIS COUNTY

J. A. Hodges' No. 1 Scott, 200 ft. S, 900 ft. W of intersection of Crosby Huffman, F. Rankin Sur. ..... Washing to bottom 3,540 ft.

Turnbull & Irwin's No. 1 Dunn, Enoch Brinson Sur., 1,550 ft. N line, 1,200 ft. W of NW cor. of Johnson Hunter Sur. ..... Drlg. shale and sand 5,253 ft.

HOUSTON COUNTY

Thompson et al's No. 1 E. W. Harrison, 330 ft. out E cor. 130-ac. tract, J. Masters, Sr., Sur. ..... No report.

Murmac Oil Co.'s No. 1 G. L. Murray & Son, John Durst Sur. ..... Preparing to resume drlg. 3,186 ft.

JEFFERSON COUNTY

Lucky Strike Oil Co.'s No. 1 Walker, D. Easley Sur., 2,100 ft. N, 1,400 ft. E of NW cor. of Lot No. 13 .. Drlg. shale 1,575 ft.

Sun Oil Co.'s No. 1 H. Long, 1,500 ft. N line, 990 ft. E line of lease ..... Drlg. shale 4,634 ft.

LIBERTY COUNTY

Brown & Wheeler's No. 1 Foster Lbr. Co., Ann Holhousen Sur., 612 varas S of N line and 4,269 varas W of E line ..... Sandy shale 5,193 ft.; S.D. for high wtr.

Brown & Wheeler's No. 1 Goldberg, Lot 14, J. Eldridge Sur. ..... S.D. for wtr. 200 ft.

Gulf Prod. Co.'s No. 2 Kirby, John Pleasants Sur., 1,866 ft. S of No. 1 ..... Drlg. gumbo 1,010 ft.

Gulf Prod. Co.'s No. 1 Grogan, Clayton Harper Sur., 1,500 ft. from E line and 466 ft. from S line ..... Rig.

Miramar Oil Corp.'s No. 1 Crowe & Jacobs, H.&T.C. Sur. 21, 950 ft. W of E line, 110 ft. N of S line of 300-ac. tract ..... Rig.

MATAGORDA COUNTY

H. E. Clark et al's No. 1 Turner, M. Cummings Sur., 4,900 ft. NE line and 3,800 ft. SE line ..... Fishing D.P. 4,373 ft.

Continental Oil Co.'s No. 1 Boker, 400 ft. out of SW cor. Lot 17, Robbins & Middle Subd., J. W. Criswell Sur. ..... T.D. 6,564 ft.; failed dry; S.D.

Oils Consd., Inc.'s No. 1 Hawkins, Daniel McCarthy Sur., 1,240 ft. NE, 350 ft. NW of S cor. ..... T.D. 5,510 ft.; sidetracked 5,190 ft.; D.S. stuck; abd.

Skelly Oil Co.'s No. 1 Cobb, M. Cummins Sur., 434 ft. from E, 1,506 ft. S of F. G. Cobb's 167-ac. tract ... Drlg. shale 5,242 ft.

United North & South Dev. Co.'s No. 1 Unit 6 (No. 2 Stoddard), 25 ft. each way out of NW cor. of Lot 19, Buckeye townsite ..... Drlg. hard sandy lime 8,644 ft.

United North & South Dev. Co.'s No. 1 Unit 25, 1,335 ft. S, 1,000 ft. E of No. 1 Unit 6 ..... S.D. in shale 8,580 ft.

MONTGOMERY COUNTY

Baker et al's No. 1 Benker, D. James Sur. ..... T.D. 4,921 ft.; P.B. to 4,909 ft.; tested S.W.; S.D.

Steen Drlg. Co.'s No. 1 Long Bell Lbr. Co., 440 ft. S and E from NW cor. of Wilson Barker Sur. ..... Cmtd. 13⅜-in. csg. 1,419 ft.

Sutton & Hawkins' No. 2 Foster est., 90 ft. E of No. 1, A. M. Del Garsa Sur. ..... Drlg. shale 3,755 ft.

NACOGDOCHES COUNTY

James W. Rich's No. 1 Unknown, J. L. Ewing Sur., 2,777 ft. from W line, 5,208 ft. from S line of survey .. No report.

ORANGE COUNTY

Texas Louisiana Oil Co.'s No. 1 Starks, 2,450 ft. N of NW cor. M. Delano Sur. 68, 10,500 ft. E at R/A. .. T.D. 1,197 ft.; **standing.**

REFUGIO COUNTY

Humble O. & R. Co.'s No. 11 O'Connor, Powers & Hewitson Sur., 301 ft. S, 833 ft. E of No. 10 ..... D.S. test 3,005-40 ft.; 510 lbs. gas; 5/16-in. choke; coring deeper.

Holland Oil Co.'s No. 1 Peck, 366 ft. N and W from SW cor. Sec. 24, Bonnie View Subd. ..... No report.

SAN JACINTO COUNTY

Piedmont Oil Co.'s No. 2 Foster, 330 ft. each way out of NE cor. Geo. Taylor Sur. ..... Digging pits.

TRINITY COUNTY

T. M. Smith et al's No. 1 C. Moody, E. Roberts Sur., 552 ft. W of E line, 1,202 ft. N of S line, of 40-ac. tract ..... Drlg. sand and shale 2,714 ft.

TYLER COUNTY

Turnbull & Irwin's No. 1 Kirby Lbr. Co., J. J. Pemberton Sur., 1,238 ft. E from SW cor. of Ledrick Lbr. Co.'s 381-ac. tract, thence S 250 ft. at R/A .. Drlg. shale 3,995 ft.

VICTORIA COUNTY

J. F. Camp's No. 2 Maurer, 3,300 ft. SW of No. 1 ..... No report.

Texas Co.'s No. 7-A McFaddin, 250 ft. due N of No. 7, A. J. Gray Sur. ..... T.D. 1,597 ft.; standing with 125 lbs. pressure.

Texas Co.'s No. 8 McFaddin, A. J. Gray Sur., 6,600 ft. N of S line, 1,383 ft. from E line of NE cor. ..... Drill stem stuck 3,609 ft.

WHARTON COUNTY

Monarch Oil Co.'s No. 1 Schateck, 150 ft. each way out of SW cor. G. W. Reynolds Sur. ..... **Standing 1,475 ft.**

Nabers et al's No. 1 Lurker, 210 ft. out of SE cor. of N½ SW Sec. 58, E.T.R.R. Sur. ..... T.D. 5,026 ft.; rebuilding derrick

Pure Oil Co.'s No. 1 W. Garrett, Sec. 28, 4,456 ft. SE, 1,690 ft. NE of W cor. ..... T.D. 6,343 ft.; **standing.**

Pure Oil Co.'s No. 2 Stewart, Morris & Cummings Sur., Sec. 25, 990 ft. out of SW cor. of 160 acres... Derrick.

Pure Oil Co.'s No. 1 A. J. Wilder, T. W. Hurd Sur., 509, 2,575 ft. SE, 1,690 ft. NE from W cor. Sec. 28 .. T.D. 7,614 ft.; D.S. stuck 6,800 ft.

Pure Oil Co.'s No. 1 W. H. Lancaster, Morris & Cummings Sur., Sec. 23, 1,650 ft. NW, 1,600 ft. SW of E cor. of section ..... **Fishing drill stem 7,142 ft.**

Pure Oil Co.'s No. 1 Wallace Houston, 858 ft. SE of NW line, 1,690 ft. NE of SW line, Sec. 28, (T. W. Heard Sur.) ..... Sand 6,441-51 ft.; washing; showing pressure 1,400-1,600 lbs.

Pure Oil Co.'s No. 1 Isaac Weaver, J. M. Brownson Sur., Sec. 22, 1,650 ft. out of N cor. of section ..... T.D. 6,181 ft.; rig up to deepen.

SOUTH LOUISIANA

ACADIA PARISH

Mills Bennett Prod. Co.'s No. 1 Riverside, 1,400 ft. S, 467 ft. E of NW cor. Sec. 61-9s-2w ..... Drlg. wtr. sand 6,654 ft.

Superior Oil Co.'s No. 1 P. O. Hermandes, 990 ft. W, 990 ft. S of NE cor. SE Sec. 34-8s-3e ..... Drlg. shale 6,384 ft.

ASCENSION PARISH

Turnbull & Irwin's No. 1 Community (Darrow) ..... Spudded.

BEAUREGARD PARISH

Humble Oil & Ref. Co.'s No. 1 Long Bell, 200 ft. E of W line and 2,640 ft. S of N line of Sec. 11-5s-7w ..... Rig.

CALCASIEU PARISH

Gulf Ref. Co.'s No. 1 Sweet Lake Oil Co., 660 ft. N, 330 ft. E of SW cor. Sec. 29-10s-5w ..... Drlg. shale 7,883 ft.

Fred Oil Co.'s No. 1 Farszt, 566 ft. N, 300 ft. W, SE cor. NW SE Sec. 26-8s-10w ..... Drlg. gumbo 1,825 ft.

Union Sulphur Co.'s No. 1 Barbe, 2,681 ft. W, 2,647 ft. S of NE cor. Sec. 1-9s-8w ..... Drlg. shale 6,612 ft.

Union Sulphur Co.'s No. 1 Bernard Ulruch, 150 ft. out of SE cor. Sec. 9-9s-10w ..... Rig.

JEFFERSON DAVIS PARISH

Humble O. & R. Co.'s No. 2 Devilbiss, 1,950 ft. S, 250 ft. W of NE cor. Sec. 14-9s-4w ..... Swabbing 3,423 ft.

Shell Pet. Corp.'s No. 1 Kratza, 660 ft. S, 330 ft. W of NE cor. NW Sec. 12-9s-4w ..... Hole clean; D.D. 4,232 ft.

Geo. W. Strake's No. 1 Pedigrew, 200 ft. out of SW cor. Sec. 9-9s-6w ..... Rig.

LAFOURCHE PARISH

Barnsdall Oil Co.'s No. 1 Harang, Lot 4, Twp. 17s-20e. .. T.D. 7,195 ft. in salt; P.B. to 6,300 ft.; drld. to 6,954 ft.; S.D.

ST. BERNARD PARISH

Southern Sulphur Co.'s No. 1 Lake Lery, 400 ft. W. 500 ft. N, SW cor. Sec. 28-13s-15e ..... Drlg. shale 1,420 ft.

ST. LANDRY PARISH

H. H. Hotchins Lbr. Co.'s No. 1 Whiteman Lbr. Co., 250 ft. out of SW cor. NE Sec. 15-5s-6e ..... S.D. 1,755 ft.

ST. MARTIN PARISH

Standard Oil Co. of Kansas' No. 1 E. B. Hopkins, Sec. 33-10s-4e ..... Shale 7,211 ft.

TERREBONNE PARISH

Texas Co.'s No. 9 State-Dog Lake ..... Drlg. shale 6,305 ft.

Texas Co.'s No. 10 State-Caillou Island ..... Drlg. sand 4,460 ft.

Texas Co.'s No. 2 State-Four Isle ..... No report.

Texas Co.'s No. 7 State Bay-St. Elaine, 3,900 ft. N, 2,300 ft. E of SW cor. Sec. 8-22s-18e ..... Drlg. shale 1,735 ft.

Texas Co.'s No. 10 State-Lake Pelto, 420 ft. N, 1,246 ft. E, SW cor. Sec. 4-23s-18e ..... Shale 4,685 ft.

VERMILLION PARISH

Hammill & Smith's No. 1 Faulk, 600 ft. S, 400 ft. E of NW cor. Sec. 5-12s-3e ..... Drlg. shale 7,040 ft.

VERNON PARISH

Vernon Oil Co.'s No. 1 Delta Land & Lbr. Co. ..... **Shale 2,600 ft.; standing.**

Robt. K. Williams, Jr.'s No. 1 Llano Del Rio, 1,185 ft. S, 1,000 ft. W of NE cor. Sec. 7-1n-9w ..... Rig

Wildcat Operations in Louisiana-Arkansas

(Continued from Page 44)

J. W Bettis et al's No. 1 Frost Lbr. Ind., 330 ft. S and W, NE cor. SW Sec. 15-9-13 ..... **Rigging up.**

Cleary Bros.' No. 1 Harris, 105 ft. S, 330 ft. E, SW cor. SE NW Sec. 10-9-13 ..... Using acid 1,860 ft.

A. G. Craig's No. 1 Belton, 330 ft. N and E, SW cor. NW NW Sec. 33-9-13 ..... S.D. 1,050 ft.

Florence Oil Co.'s No. 2 Crawford, Sec. 20-9-13 ..... Fishing for D.S. 1,800 ft.

Alfred Glassell's No. 1 Tatum, 330 ft. N and W SE cor. NE NW Sec. 9-9-13 ..... S.D.; W.O. 1,942 ft.

Helena O. & G. Co.'s No. 1 E. L. Graham, 330 ft. N and W, SE cor. NE NW Sec. 20-9-13 ..... Comp. flowing 350 bbls., 1,955 ft.

Helena O. & G. Co.'s No. 2 Chambliss, 330 ft. S and E, NW cor. SW NE Sec. 20-9-13 ..... W.O.S.R. 1,955 ft.

R. P. Holland's No. 1 Harris, 587 ft. N, 530 ft. E, SW cor. SE NW Sec. 10-9-13 ..... W.O.S.R. 1,952 ft.

R. P. Holland et al's No. 1 A. J. Burkett, 990 ft. N, 330 ft. W of C, Sec. 10-9-13 ..... W.O.S.R. 1,850 ft.

Lanier & Rodgers' No. 1 Paul, 260 ft. N, 40 ft. E, SW cor. NW, Sec. 10-9-13 ..... Swbng. 1,900 ft.

Miles & Strickland's No. 1 Ross & Son, 150 ft. N, 900 ft. E, SW cor. NW Sec. 10-9-13 ..... W.O.S.R. 2,007 ft.

John W. Moffett's No. 1 Logan Oil Co., Sec. 3-2-14 .. W.O.S.R. 1,985 ft.

Geo. W. Pace's No. 1 Quinn, 600 ft. E, 180 ft. S, NW cor. Sec. 10-9-13 ..... W.O.S.R. 2,012 ft.

Dr. C. R. Reed's No. 1 Allen, 495 ft. S, 600 ft. E, NW cor. Sec. 10-9-13 ..... W.O.S.R. 1,623 ft.

Reese and Martin's No. 1 Allen, 762 ft. S and 308 ft E NW cor. Sec. 10-9-13 ..... Drlg. 1,470 ft.

J. D. Reynolds' No. 3 Paul est., 586 ft. N, 263 ft. W, SE cor. SW NE, Sec. 9-9-13 ..... Set 6-in. 1,522 ft.; testing 1,961 ft.

J. D. Reynolds' No. 1 Paul est., 291 ft. N, 738 ft. W, SE cor. SW NE Sec. 9-9-13 ..... Junked and abd. 1,985 ft.

W. H. Rowe et al's No. 1 Craig, 330 ft. S and E. of center Sec. 22-9-13 ..... Set 10-in. 40 ft

Sabine Royalties Co.'s No. 2 Graham, 330 ft. N and E. SW cor. NW, Sec. 20-9-13 ..... Bailing 2,017 ft.

J. E. Sedberry's No. 1 Morgan, NE cor. NW NW Sec. 10-9-13 ..... Set 6-in. 1,761 ft.

J. B. Williams' No. 1 Tatum, 330 ft. N and W, SE cor. NW SE Sec. 32-9-13 ..... Rigging up.
Windsor Oil Co.'s No. 2 Barr, 330 ft. N and E, SW cor. NW Sec. 15-9-13 ..... Location.
Winn & Caviness' No. 1 Paul est., 330 ft. N, 43 ft. W, SE cor. NW Sec. 9-9-13 ..... Testing 1,918 ft.

SABINE—ZWOLLE

H. C. Maulding's No. 1 Alford, 330 ft. S and W, NE cor. NW NW Sec. 18-7-10 ..... Derrick.
H. C. Maulding's No. 1 Van Vickhaven, 330 ft. N and W, SE cor. NE Sec. 3-7-11 ..... Set 6⅝-in. 2,278 ft.

WEBSTER PARISH

J. P. Evans' No. 1 Crichton, 350 ft. N and W, SE cor. NE SW, Sec. 34-18-9 ..... S.W. and abd. 2,377 ft.

Arkansas

JEFFERSON COUNTY

J. E. Elliott's No. 1 B. V. Nevin, 440 ft. N and E, SW cor. SW NW Sec. 26-4-10 ..... Partly rigged up and S.D.

HEMPSTEAD COUNTY

A. H. Bagnelle's No. 1 Trattner & Rhinehart, Sec. 2-13-26. Reaming to bottom 947 ft.

LAFAYETTE COUNTY

Douglas Lawn's No. 1 Camp, 330 ft. S and W, NE cor. SW SE Sec. 14-15-23 ..... Set 10-in. 52 ft.
George W. Harper's No. 2 Bodcaw, 150 ft. S, 550 ft. E NW cor. SW NW Sec. 16-15-22 ..... S.D. 1,216 ft.

MILLER COUNTY

Black Diamond Oil Co.'s No. 1 Miller Land Co., Sec. 29-15-27 ..... S.D. for fuel 3,420 ft.
Duluth-Ark. Oil Co.'s No. 2 Beck, 330 ft. S and E, NW cor. SE SW Sec. 34-15-26 ..... Testing 2,807 ft.
Fitzwater et al's No. 1 Norson, SW cor. SE SW Sec. 20-15-27 ..... Set 6⅝-in. 2,978 ft.; T.D. 3,008 ft.
Magnolia Pet. Co.'s No. 2 Olivet, 310 ft. S, 1,170 ft. E NW cor. NW NE Sec. 4-16-26 ..... Set 12½-in. 261 ft.; drlg. 2,060 ft.
C. E. Murdock's No. 1 Rose, Sec. 4-16-26 ..... P.B. to 2,933 ft.; W.O.S.R.
C. E. Murdock's No. 1 Smith (formerly Baker & McMurray), 150 ft. N and W, SE cor. SE SW Sec. 33-15-26 ..... W.O.S.R. 2,926 ft.
Frank W. Roe's No. 1 Dominick, 330 ft. S and E, NW cor. NW NW Sec. 21-15-26 ..... Arrng. resume drlg. 2,830 ft.
Texarkana Oil Corp.'s No. 2 E. L. Beck, 240 ft. N. 450 ft. E. SW cor. SW SE Sec. 33-15-26 ..... W.O.S.R. 2,931 ft.
Lee Timberlake's No. 1 B. F. Smith, 150 ft. N and W, SE cor NE SW Sec. 33-15-26 ..... Dry and abd. 2,945 ft.

OUACHITA COUNTY

F. G. Harrell's No. 1 Poindexter, 330 ft. S and E NW cor. Sec. 35-15-18 ..... Testing 2,342 ft.
L. L. McDonald's No. 1 J. A. Robertson, 200 ft. S and E, NW cor. NE NW Sec. 25-15-16 ..... W.O.S.R. 2,092 ft.

UNION COUNTY

E. R. Henderson's No. 2 J. H. Ogden, 330 ft. S and E, NW cor. SW SE Sec. 32-18-14 ..... W.O.S.R. 2,208 ft.
E. R. Henderson's No. 1 Vines, 330 ft. N and W, SE cor. SW SE Sec. 29-18-14 ..... Arrng. set 6-in. 2,161 ft.
Marine Oil Co.'s No. 2 Union Sawmill Co., 330 ft. S and E, NW cor. SE SE Sec. 3-18-13 ..... W.O.S.R. 3,562 ft.
Chas. Steele's No. 1 J. B. Combs, 150 ft. N, 185 ft. W, SE cor. SW NW Sec. 25-18-16 ..... Rigging up.

Mississippi

GREENE COUNTY

United Gas Public Service Co.'s No. 1 Davis, C NW Sec. 30-1n-5w ..... Set 16-in. 214 ft.; drlg. 1,200 ft.

NEWTON COUNTY

Bod Dalton et al's No. 2 Majurs, SE SE Sec. 25-6-11. .. Drlg. 3,380 ft.

SIMPSON COUNTY

Beavy Corp.'s No. 1 R. J. Beavy, C SW Sec. 33-3n-4e... Arranging to set 6⅝-in. 2,325 ft.

WALTHALL COUNTY

Mutual O. & G. Co.'s No. 1 Boyd, Sec. 24-2n-9e, SW cor. SW SE ..... Moving in rig.

WARREN COUNTY

Orbet Drlg. Co.'s No. 1 R. L. Parker, 300 ft E. CWL, Sec. 14-14-1e ..... Drlg. 2,710 ft.

Louisiana-Arkansas Proven Areas

North Louisiana

BOSSIER PARISH

Company, well, farm name, section and block— Remarks:

United Gas Pub. Serv. Co.'s No. 1 Skannell Unit, Sec. 13-17-12 ..... Coring 4,240 ft.

CADDO—RODESSA

Louana O. & G. Co.'s No. 2-A Hammock, C NW NE Sec. 5-18-16 ..... Drlg. 1,600 ft.
R. W. Norton's No. 1-B J. B. French, 660 ft. S and E, NW cor., Sec. 34-23-16 ..... Drlg. 5,950 ft.

CLAIBORNE PARISH

United Gas Public Service Co.'s No. 2 Tony Durrett, 38 ft. S, 50 ft. W of CNL NE NW Sec. 8-19-5..... Drlg. 3,977 ft.

MOREHOUSE PARISH

United Carbon Co.'s No. 1 Montgomery, 1,339 ft. S, 2,268 ft. E of C Sec. 9-21-5l ..... S.D. 2,500 ft.

OUACHITA PARISH

Hatcher & Evans' No. 10 Hatcher, Sec. 17-19-4..... Comp. 2,160,000 ft. gas 2,183 ft.

SABINE PARISH—ZWOLLE

Baird Bros.' No. 1 Cooper, 330 ft. S and W, NE cor. SE Sec. 30-8-11 ..... Set 6-in. 2,272 ft.
Dyer et al's No. 1 McCollister, 330 ft. S and E, NW cor. SW NE Sec. 24-7-12 ..... Drlg. 1,047 ft.
Magnolia Pet. Co.'s No. 2 Gindratt, 330 ft. N, 320 ft. E. SW cor. SE Sec. 30-8-11 ..... T.A. 2,485 ft.
L. C. McGuffin's No. 2 Chaddick, Sec. 5-7-10 ..... Testing 2,705 ft.
J. H. Reeves' No. 1 Sabine Lbr. Co., 330 ft. N and S SE cor. NE NW Sec. 7-7-11 ..... Set 6-in. 2,386 ft.
C. T. Ruffin's No. 2 Williams, 330 ft. N and W, SE cor. NW NE Sec. 7-7-11 ..... Set 10-in. 40 ft.; drlg. 1,235 ft.
A. H. Tarver's No. 2 Baur and Barthold, Sec. 25-8-12 .. Set. 6-in. 2,321 ft.
L. J. Tillery's No. 1 Sabine Lbr. Co., 800 ft. S. 220 ft. W. NE cor. Lot 3, La. Nava. grant. Sec. 5-7-11 . . . Testing 2,475 ft.
John Wrather et al's No. 1 Pruitt, 110 ft. W, 330 ft. N, SE cor. SW NE Sec. 25-8-12 ..... Set 10-in. 100 ft.; drlg. 1,974 ft.

Mississippi

HINDS COUNTY

B. B. Jones' No. 1 Stone, 500 ft. S, 100 ft. E, NW cor. Sec. 18-5n-3e ..... Drlg. 4,840 ft.

RANKIN COUNTY

Ferguson, Fuller & Metz' No. 1 Ammons, 350 ft. E and S, NW cor. NW NW Sec. 35-3n-3e ..... Partly rigged up and S.D.
Cleve Love et al's No. 1 Thomas, SW Sec. 10-4-1e ..... Drlg. 5,350 ft.

East Texas (Border Counties)

PANOLA COUNTY

Dale and Sneed's No. 1 Wooten estate, P. Martin Sur. .. Rigging up.
Holden and Nichols' No. 1 S. W. Ray, W. B. Culver Sur. ..... W.O. csg. 2,080 ft.
Kelsker and Uanler's No. 1 Frost Lbr. Ind., Mary Potts Sur. ..... Arranging test 2,135 ft.
C. R. Obermeyer et al's No. 1 Wooten estate, P. Martin Sur. ..... W.O. csg. 2,110 ft.
Rocunda and Acres' No. 1 Burnett Lbr. Co., J. H. Mallory Sur. ..... Rigging up.
Southern Prod. Co.'s No. 3 Wooten estate, P. Martin Sur. ..... Drlg. 1,570 ft.

Wildcat Operations in Southwest Texas

(Continued from Page 50)

EDWARDS COUNTY

Love and Evans' No. 1 Steve Brown, 660 ft. from N and E lines of Sec. 66, G.W.T.&P.R.R. Sur., 15 miles W of Rock Springs ..... T.D. 3,002 ft.; at contract depth; waiting on heavier rig.

FRIO COUNTY

Amerada Pet. Corp.'s No. 1 Frank Doering, 34 ft. from W line, 1,700 ft. from S line of Tract No. 7 in Marcia Louisa Carranza Sur. No. 302 ..... T.D. 6,067 ft.; sidetracking.

GUADALUPE COUNTY

A. F. Barnhill's No. 3 F. A. Phillman, 1,300 ft. from N line, 152 ft. from E line of lease in L. Bollinger Sur. ..... T.D. 2,164 ft.; drlg. chalk.

HAYS COUNTY

J. C. Crowder's No. 1 Burnett, 2,370 ft. from E line, 1,400 ft. from N line of tract in J. Ingram Sur. .... T.D. 430 ft.; set csg.

HIDALGO COUNTY

Chancellor & Hall's No. 1 Garcia, 150 ft. from W line of Porcion No. 42, and 150 ft. N of old Military Highway ..... T.D. 3,187 ft.; D.D.
Daskom Bros.' No. 1 fee, center of Porcion No. 45, and ½ mile S of Highway No. 4 ..... T.D. 4,400 ft.; drlg.
McGinley's No. 1 Francisco B. Guerra, 300 ft. from N and E lines of 40-ac. tract in Share 12, Porcion 41.. Spudded in.

JIM HOGG COUNTY

Clark & Cowden Drlg. Co.'s No. 3 E. Vela, 985 ft. from E line, 2,762 ft. from S line, Sec. 588 in El Peyote grant ..... Rigging up.
DeWitt C. DeWitt's (Scarp Oil Co.) No. 1 A. G. Lopez, 3,475 ft. from W line, 425 ft. from N line of Sur. No. 106 ..... T.D. 2,883 ft.; in sand at 2,866-83 ft.; tested S.W.; D.D.
French Oil Co.'s No. 1 Gutierrez, 330 ft. from N line, 330 ft. from W line, Blk. 1, in Sur. No. 142, E from Alworth Pool ..... Rigging up.
Jay E. Jones' No. 1 Lum Saunders, center of Blk. 41, Sec. 9, Holbien Subd. of Las Animas grant ..... T.D. 3,007 ft.; abd.
A. W. Majors' No. 1 M. Guerra & Son, 2,444 ft. from W line, 3,698 ft. from N line of Sur. No. 369, in SW part of county ..... Location.

JIM WELLS COUNTY

Plymouth Oil Co.'s No. 1 Cuero Cattle Co., 330 ft. from S and W lines of H.T.&B. Sur. No. 7, 2½ miles W from Alfred ..... Rigging up.
Trinity Drillers' No. 1 Seeligson, 330 ft. from N and E lines of Sec. 71, of R. P. Haldeman Subd., and in S.K.&K. Sur. No. 215 ..... T.D. 4,032 ft.; P.B. to sand at 2,336-84 ft.; flowed volume of gas and 50 bbls. of 22 gravity oil with 650 lbs. on csg. and tubing.

KARNES COUNTY

Campbell et al's No. 1 Ira Coats, 330 ft. from S and E lines of 260-ac. tract in Carlos Martinez Sur. .... T.D. 1,820 ft.; drlg.
C. J. Webster's No. 1 J. B. Cannon, 1,140 ft. from N line, 250 ft. from E line of 80-ac. tract in Lambrano Sur. ..... T.D. 1,790 ft.; standing; may deepen to Yegua.

KENDALL COUNTY

A. P. Pierce's No. 1 Werner, in SW cor. of 40-ac. tract 150 ft. from S and W lines, in J. F. Torrey Sur. .... T.D. 992 ft.; S.D.; will treat with acid; showed oil in lime 955-64 ft.
W. E. Waldrip's No. 1 Charles Meckel, 300 ft. from E line, 3,300 ft. from S line of Thos. J. Sweeney Sur. No. 10 ..... T.D. 415 ft.; waiting for csg.

KERR COUNTY

J. E. Anderson's No. 1 J. D. Witt, 1,320 ft. from N line, 1,220 ft. from W line of Sec. 1,923, in Hamilton Sur., 4 miles S of Center Point ..... T.D. 1,885 ft.; standing in shale and sand.
Van Duyn & Moore's No. 1 Nowlin, 2,000 ft. from E line, 2,200 ft. from N line of Jas. R. Bettner Sur. No. 99 ..... T.D. 1,040 ft.; standing.

KLEBERG COUNTY

Harry Clark's No. 1 V. J. Kivlin, 360 ft. from E line, 400 ft. from S line of Sec. 39, Blk. 8, Kleberg Town & Improvement Co. Sur. ..... T.D. 2,050 ft.; S.D.

LEE COUNTY

H. A. Sherlack's No. 1 Otto, 736 ft. from NW line, 1,310 ft. from NE line of 57.5-ac. tract in Thomas Morrow Sur. ..... Rigging up.

LIVE OAK COUNTY

H. Coquat et al's No. 1 Burgess, 990 ft. from W line of Sec. 77, 33 ft. from N line of Simmons Subd. in farm tract No. 3,487 ..... T.D. 2,130 ft.; sand 2,117-20 ft.; upper 2 ft. oil sand; 2,120-30 ft. sand; coring deeper.
Loma Oil Co.'s No. 1 Reiffert, 300 ft. from NW line, 1,100 ft. from SW line of 130-ac. tract, in Stephen Hays Sur. ..... Rigging up.
Marine Oil Corp.'s No. 1 J. B. Dunning, 4,500 ft. from E line, 150 ft. from N line of 462-ac. tract in Maria Bridget Kiolin Sur. ..... Rigging up.
Stuart Mossman's No. 1 W. J. Armstrong, 2,970 ft. from S line, 330 ft. from W line of 269-ac. tract in Henry Sur. ..... T.D. 741 ft.; drlg.

MAVERICK COUNTY

C. L. Mahoney's No. 1 Wyche, 150 ft. from S line, 300 ft. from W line of 453-ac. tract in Sec. 20..... T.D. 340 ft.; S.D.

McMULLEN COUNTY

Armoil Prod. Co.'s No. 1 Kate Martin, 1,470 ft. from SE line, 1,470 ft. from SW line of H.T.&B. Sur. No. 9 ..... T.D. 2,023 ft.; standing.
Lefevre & Spice's No. 1 Hagist, 330 ft. from N and E lines of S 200 acres of Sec. 17, of H.&T.C.R.R. Sur... T.D. 2,000 ft.; drlg.
Paul C. Teas' No. 4 Hagist, 330 ft. from S and W lines of 80-ac. tract, and 330 ft. from W line and about 2,250 ft from S line of Sur. No. 187 ..... T.D. 700 ft.; waiting for fuel.
Two Rivers Oil Co.'s No. 2 Two Rivers Ranch, 330 ft. from W line, 100 ft. from N line of Sec. 64, of Two Rivers Ranch Subd. ..... T.D. 317 ft.; S.D.
Snider, Whisenant & Trenchard's No. 1 Bremer, 330 ft. from S and E lines of Blk. 15 of Borcher's Subd., 2 miles SW of Callihan ..... T.D. 846 ft.; S.D. account of rain.

MEDINA COUNTY

O. R. Framme's No. 1 E. Boelke, 987 ft. from N line, 600 ft. from E line of 102-ac. tract in S. Huth Sur. No. 10 ..... T.D. 915 ft.; drlg.

MILAM COUNTY

O. H. Birdwell's No. 1 J. R. Bartek, 150 ft. from N line, 180 ft. from W line of 88-ac. tract in J. A. de Pena Sur. ..... T.D. 940 ft.; standing.
Fred Pederson's No. 1 T. E. Fulton, 1,000 ft. from NW line, 320 ft. from NE line of 148-ac. tract in Juan Jose Acosta Sur. ..... T.D. 1,148 ft.; drlg. chalk.
B. F. Robinson's No. 1 W. M. Caffey, 150 ft. N and E from SE cor. of B. P. Duncan Sur. and in 50-ac. tract in J. Bright Sur. ..... T.D. 2,506 ft.; abd.; dry.
B. F. Robinson's No. 1 W. M. Caffey, 150 ft. N and E, of SE cor. of B. P. Duncan Sur. in SW cor. of 50-ac. Caffey tract in J. Bright Sur. ..... T.D. 1,965 ft.; laying wtr. line.

NUECES COUNTY

Texon Royalty Co.'s No. 1 McCoy, 330 ft. from W line, 3,830 ft. from S line, in Sec. 3 of Palo Alto Sur . T.D. 5,500 ft.; abd.

SAN PATRICIO COUNTY

Heep Oil Corp.'s No. 1 R. H. Welder, center of J. M. Portilla Sur. ..... T.D. 6,000 ft.; S.D. at contract depth.

Plymouth Oil Co.'s No. 1 Welder, 4,700 ft. N of Chiltipin Creek, 900 ft. from W line of J. M. and F. Portilla Sur., 1½ miles N from Sinton ..... Moving in rig.

STARR COUNTY

Accumulative Royalty Co.'s No. 1, Martinez, 800 ft. from S line, 500 ft. from W line of C.C.S.D.&R. G.N.G. Sur. No. 217 ..... T.D. 2,865 ft.; changing rigs.

B. & B. Oil Co.'s No. 2 Kelsey Bass, 330 ft. from W and S lines of Blk. 13 of Subd. of Porcions 86 and 87, jurisdiction Camargo ..... Rigging up.

Danvers & Harrison's No. 1 C. Ramos, 2,310 ft. from SE line, 330 ft. from SW line of Sur. No. 150 ..... T.D. 1,260 ft.; drlg.

Goodwin & Yantis' No. 5 Kelsey Bass, 150 ft. from S and W lines of Blk. 1, Sur. 3, of Coastal O. & G. Co.'s Subd. of Porcion 86, jurisdiction Camargo.... Rigged up.

Great Plains Oil Co.'s No. 1 Sanchez, 660 ft. from W line, 330 ft. from S line of SE NW of Sur. No. 344.. T.D. 3,865 ft.; csg. on ground.

Jeffries-Lambeth Drlg. Co.'s No. 2 Starr County Cattle Co., N of No. 1 in Share 60, Porcion 89 ..... Location.

W. H. Liber's No. 1 I. Y. Garcia, 1,546 ft. from N line, 962 ft. from W line of 254-ac. tract in Porcion No. 75, jurisdiction of Camargo ..... T.D. 840 ft.; drlg.

Myers, Sullivan & Jenkins' No. 1 Starr County Cattle Co., 330 ft. from N line, 330 ft. from W line, Blk. 62, Porcion 89, Share 60 ..... T.D. 2,520 ft.; standing.

R. D. Perkins & Hoffman's No. 1 E. A. Peffler, 2,030 ft. from W line, 2,480 ft. from S line of Sur. 933... T.D. 1,200 ft.; drlg.

TRAVIS COUNTY

Franklin et al's No. 1-A Reimers, 1,200 ft. from SE line, 1,600 ft. from most southerly SW line of Sur. No. 35 ..... T.D. 925 ft.; standing; to be comp. by R. L. Batts.

G. M. Rowe's No. 2 Smith (200-ac. tract), 450 ft. from NE and SE lines of tract in L. Kimbro Sur. ..... T.D. 700 ft.; coring Serpentine.

UVALDE COUNTY

Frank A. Brown's No. 1 Milliken, 1,800 varas from W line which is Sabinal River, and 108 varas from S line of Antonio Cruz Sur. No. 383 ..... T.D. 565 ft.; drlg.

WEBB COUNTY

Cole Pet. Co.'s No. 82 R. Benavides, 402 ft. from W line, 160 ft. from S line of Blk. 3, Sur. No. 412.... Rigging up.

Magnolia Pet. Co.'s No. 2 S. S. Benavides, 660 ft. from N line, 150 ft. from W line of Sur. No. 696 ..... Rigging up.

L. E. Lockhart's No. 1 E. Eikel, 330 ft. from N line, 260 ft. from E line of Sur. No. 1,672 ..... Rigging up.

WILSON COUNTY

Bexar Pet. Co.'s (formerly Humble) No. 1 Houston, 900 ft. from SE line, 450 ft. from SW line of tract in Jos. Reynolds Sur. ..... T.D. 5,211 ft.; lost 600 ft. drill stem in hole; showed little oil.

Bidnar & Powell's No. 1 L. C. George, 400 ft. from SE line, 475 ft. from SW line of 86.5-ac. tract in C. Diaz Sur. No. 44 ..... T.D. 1,140 ft.; standing.

WILLIAMSON COUNTY

McLean et al's No. 2 R. C. Miller, 300 ft. to S line, 100 ft. to W line of tract, B. Manlove Sur. ..... T.D. 2,300 ft.; standing.

R. S. Wilson's No. 2 Sing, 300 ft. from SW line, 1,250 ft. from SE line, of T. A. Moore Sur. ..... T.D. 525 ft.; drlg.

ZAPATA COUNTY

J. P. Doyle's No. 1 I. Ramirez, 150 ft. from NW and SW lines of Blk. 15, Share 1, Porcion 18 ..... T.D. 40 ft.; spudded in; S.D.

Muckelroy's No. 1 Flores, on NE line and 75 ft. from SE line of Lot 2, Blk. 30, Muckelroy Subd. of Porcion No. 37 ..... Derrick.

Texas Co.'s No. 38 Whitehead, 3,302 ft. from SE line, 20,998 ft. from SW line in Cerrito Blanco Sur. .... Rigging up.

Southwest Texas Proven Areas

Week Ending January 27, 1934

CEDAR CREEK POOL—BASTROP COUNTY

Cole Pet. Co.'s No. 3 American Natl. Bank, 350 ft. W of No. 1 in R. Gage Sur. ..... T.D. 1,690 ft.; coring Serpentine.

Marts & Beavens' No. 6 Reyes, 150 ft. from NW and SW of Amada Reyes' 233-ac. tract in Addison Litton League ..... Rigged up.

HILBIG POOL—BASTROP COUNTY

Humble O. & R. Co.'s No. 2 F. O. Beck, 45 acres, 420 ft. from NE line of survey and tract, 750 ft. from SE line of tract, or 1,000 ft. SE of No. 1 in Andrew Mays Sur. ..... T.D. 59 ft.; set 10¼-in. surface csg.

NORTH DALE POOL—BASTROP COUNTY

Marts & Beavens' No. 1 J. W. Miears, 1,065 ft. from SW line, 685 ft. from NW line of John Maximilian Sur. .. T.D. 2,130 ft.; cored lime.

Ogden & Reed's No. 1 W. F. Talley, 200 ft. from SE and SW lines of 198-ac. tract in Joshua Gray Sur... T.D. 1,200 ft.; drlg.

Watt L. Saunders' No. 1 Harris, 1,100 ft. from SW line, 2,530 ft. from NW line of John Maximilian Sur. No. 22 ..... T.D. 150 ft.; drlg.

Witherspoon Oil Co.'s No. 1 A. H. Harris, 150 ft. from SE and SW lines of Harris' 180-ac. tract in Joshua Gray Sur. ..... Rigged up.

TULETA POOL—BEE COUNTY

Garland Clymore's No. 1 Rapp & Hatch, 650 ft. E along the S line from R.R., thence 1,350 ft. N at R/A in Sec. 12 of J. M. Uranga Sur. ..... T.D. 800 ft.; drlg.; first reported as No. 1 Rapp & Hatch.

ECKERT POOL—BEXAR COUNTY

Alamo Nat. Gas Co.'s No. 2 Coreth, 300 ft. SE of Humble's No. 2 Coreth in A. Stafford Sur. ..... T.D. 1,055 ft.; standing.

J. F. Harrison's No. 1 F. Gembler, 150 ft. from NW line, 460 ft. from NE line of 88-ac. tract in J. Montes Sur. ..... T.D. 831 ft.; S.D.

S. J. Moore's No. 2 T. W. Masterson, 150 ft. from S line, 175 ft. from W line of 41-ac. tract in Miguel Gortaris Sur. ..... T.D. 330 ft.; bailing after setting on bottom with lower joint perforated.

S. J. Moore's No. 1 T. W. Masterson, 150 ft. from S and W lines of tract in M. Cartari Sur. ..... T.D. 736 ft.; set 8-in. csg.

Trio Oil Co.'s No. 7 Sandermer, 1,400 ft. from E line, 180 ft. from S line of 109-ac. tract in A. Manchaca Sur. No. 51 ..... T.D. 605 ft.; comp. 8 bbls. daily.

VON ORMY POOL—BEXAR COUNTY

Von Ormy Oil Co.'s No. 2 E. B. Carruth, 515 ft. from W line, 1,970 ft. from S line of 160-ac. tract out of 657-ac. tract in F. Rolen Sur. ..... Rigged up and standing.

WEBSTER POOL—CALDWELL COUNTY

C. J. Webster O. & G. Co.'s No. 2 McCroy, 750 ft. from S line, 150 ft. W of NE cor. of tract in John A. Neill Sur. ..... T.D. 2,276 ft.; drlg. in after P.B. to 600 ft.

EAGLE HILL POOL—DUVAL COUNTY

Al Buchanan's No. 4 Duval Ranch, 660 ft. W of No. 1, in Sur. No. 206 ..... Rigging up.

Al Buchanan's No. 3 Duval County Ranch Co., 330 ft. from S line, 2,310 ft. from E line of N½ of Sur. No. 206 ..... T.D. 1,489 ft.; est. 150 bbls.; making considerable gas.

Al Buchanan's No. 4 Duval County Ranch Co., 990 ft. from S line, 2,310 ft. from E line of N½ Sur. 206.. Rigged up.

Texas Co.'s No. 7-A Duval County Ranch Co., 660 ft. W of No. 6-A, in N½ N½ of Sur. No. 206 ..... T.D. 2,137 ft.; tested gas and a little oil; running liner.

EAST COLE POOL—DUVAL COUNTY

Allen & Morris' No. 1 Bruni, 418 ft. from NE line, 260 ft. from SE line of Blk. 2, Sec. 5, of Adams Subd. of Arispe grant ..... Rigged up.

Cole Pet. Co.'s No. 2 S. Benavdies, 350 ft. from SE line, 300 ft. from SW line, Blk. 347, Hale's Subd. of Arispe grant ..... T.D. 2,430 ft.; comp. 30,000,000 ft. of gas.

Motes-Campbell's No. 1 Bruni, 150 ft. from NE and SE lines of Sec. 493, Myrtle E. Hale Subd., Mariano Arispe grant ..... T.D. 1,300 ft.; drlg.

IGNACIO POOL—DUVAL COUNTY

DeSoto O. & G. Co.'s No. 3 Wood-Welder, 3,120 ft. from W line 1,170 ft. from N line of Sur. No. 211.. Rigging up.

Texas Co.'s No. 1 Rodrigues, 330 ft. from S and W lines of N½ of Sur. No. 212 ..... T.D. 2,608 ft.; drlg.

NORTH GOVERNMENT WELLS POOL—DUVAL COUNTY

Humble O. & R. Co.'s No. 30 C. W. Hahl, 2,310 ft. from S line, 1,650 ft. from W line of E½ Sur. No. 360 ..... T.D. 108 ft.; drlg.

Humble O. & R. Co.'s No. 31 C. W. Hahl, 1,650 ft. from N line, 330 ft. from W line of Sur. No. 74.... T.D. 1,950 ft.; drlg.

Magnolia Pet. Co.'s No. 17 Duval County Ranch Co., 990 ft. from S and W lines of Sur. No. 208 ..... Rigging up.

Magnolia Pet. Co.'s No. 5 Lundell, 474 ft. from S line, 615 ft. from W line of SE Sur. No. 60 ..... T.D. 1,815 ft.; drlg.

Magnolia Pet. Co.'s No. 2 Duval County Ranch Co., 330 ft. from S line, 990 ft. from E line of NE of Sur. No. 363 ..... T.D. 1,450 ft.; drlg.

Magnolia Pet. Co.'s No. 15 Duval Ranch, 2,310 ft. from E line, 1,650 ft. from S line of Sur. No. 208..... T.D. 2,331 ft.; comp. 150 bbls. oil; 5,000,000 ft. gas on ¼-in. choke.

Magnolia Pet. Co.'s No. 4 Lundell, 990 ft. from S line, 2,310 ft. from E line of Sur. No. 60 ..... T.D. 2,257 ft; comp. 145 bbls. dly.

Reynosa Oil Corp.'s No. 7-A Duval County Ranch, 330 ft. from N line, 990 ft. from E line of N½ SW of Sur. No. 362 ..... T.D. 1,525 ft.; drlg.

Smith & Story's No. 6-A E. C. Lundell, 150 ft. from S line, 150 ft. from W line of SE SW Sur. No. 48.... T.D. 2,253 ft.; setting csg.; W.O.C.

Sun Oil Co.'s No. 27 Hahl, 330 ft. N line, 660 ft. W line of Sur. No. 359 ..... T.D. 1,650 ft.; drlg.

Sun Oil Co.'s No. 28 Hahl, 1,650 ft. from E line, 3,630 ft. from N line of Sur. No. 359 ..... T.D. 60 ft.; set surface csg.

Sun Oil Co.'s No. 24 Welderkehr, 2,970 ft. from N line, 1,650 ft. from E line of Sur. No. 359 ..... T.D. 2,266 ft; comp. 240 bbls. dly.

Sun Oil Co.'s No. 25 Welderkehr, 330 ft. from N line, 1,650 ft. from E line of Sur. No. 359 ..... T.D. 2,200 ft.; drlg.

Sun Oil Co.'s No. 26 Welderkehr, 2,030 ft. W of No. 25 in Sur. No. 359 ..... Rigged up.

Texas Co.'s No. 4 (fee) D.C.R., 990 ft. from W line, 330 ft. from S line of SE of Sur. No. 362 ..... T.D. 1,024 ft.; drlg.

Texas Co.'s No. 10 H. Wendt, 330 ft. from W line, 1,650 ft. from N line of Sur. No. 42 ..... Location.

Texas Co.'s No. 9 Johnson, 330 ft. from S and W lines of NW of Sur. No. 42 ..... T.D. 2,283 ft; comp. 240 bbls. dly.

Violet Oil Co.'s No. 3 Webb, 990 ft. from N line, 330 ft. from E line of Sur. No. 41 ..... Set surface csg.

Violet Oil Co.'s No. 2 M. Webb, 330 ft. from N line, 330 ft. from E line of Sur. No. 41 ..... T.D. 2,263 ft.; comp. 72 bbls. dly.

SOUTH GOVERNMENT WELLS POOL—DUVAL COUNTY

Rodney DeLange's (Cox & Hamon) No. 4 Lundell, 330 ft. from N and W lines of SE SW Sur. No. 60.... T.D. 2,165 ft.; set csg.

Humble O. & R. Co.'s No. 17 Paul White, 990 ft. from S line, 330 ft. from E line of Sur. No. 249..... Location abd.

SARNOSA POOL—DUVAL COUNTY

Magnolia Pet. Co.'s No. 5 Ruiz, 330 ft. from NE and SE lines of S¼ of Sur. No. 574 ..... Derrick.

Wertheimer Oil Corp.'s No. 2 Hernendez, 458 ft. SE of No. 1, and 357 ft. NE of SW line of E¼ of Sur. No. 574 ..... T.D. 2,500 ft.; jetting 7 bbls. hrly.

GOLIAD COUNTY

United Prod. Co.'s No. 8 Ray, 3,388 ft. from N line, 958 ft. from E line of Moore Sur. ..... T.D. 6,054 ft.; W.O. job; being P.B. to Pettus sand at 4,054 ft.; swabbing.

NEW BERLIN POOL—GUADALUPE COUNTY

J. A. Harper's No. 2 Rosenbrook, 660 ft. SW of No. 1...T.D. 701 ft.; standing.

ALWORTH POOL—JIM HOGG COUNTY

French Oil Corp.'s No. 1 M. Garza (W side of pool), Sur. No. 281 ..... Set surface csg.

KINGSVILLE POOL—KLEBERG COUNTY

Ryals & Bartlett's No. 1 Flato, 150 ft. from N line, 30 ft. from W line of NE SE Sec. 40, of Kleberg Town & Improvement Co. Sur. ..... Derrick.

JACOB POOL—McMULLEN COUNTY

C. R. Kennon's No. 1 Lark, 310 ft. from W line, 150 ft. from N line of 20-ac. tract, Blk. 27, Scrugham Sur. ..... T.D. 1,046 ft.; recemented.

Loma Oil Co.'s No. 18-A Jacobs, 660 ft. S of No. 11, in W. H. Jacobs Sur. No. 8 ..... Derrick.

AGUA DULCE POOL—NUECES COUNTY

Garland Clymore's No. 1 Ollie Purl ..... T.D. 4,858 ft.; est. 100 bbls. gasoline daily.

CUEVITAS POOL—STARR COUNTY

Sun Oil Co.'s No. 3-C Guerra, 1,800 ft. from NE line, 660 ft. from SE line, Sacatosa grant ..... T.D. 2,307 ft.; P.B. to 2,189 ft.; comp. as gas well.

Sun Oil Co.'s No. 1-D Guerra, 6,353 ft. from NE line, 3,300 ft. from SE line of La Sacatosa grant ..... Rigging up.

LOS OLMOS POOL—STARR COUNTY

Los Olmos O. & G. Co.'s No. 57 Kelsey Bass, 150 ft. from N line, 588 ft. from W line of SE SW Sec. 6, Porcions 75, 76 and 77 ..... T.D. 640 ft.; standing; depth corrected.

CAROLINE-TEXAS POOL—WEBB COUNTY

Carolina-Texas O. & G. Co.'s No. 11 S. Benavides, 150 ft. from S line, 600 ft. from W line of Blk. 12, Sur. No. 633 ..... T.D. 2,800 ft.; drlg.

LAUREL POOL—WEBB COUNTY

South Texas Oil Co.'s No. 18 Rosenberg, 550 ft. from S line, 250 ft. from E line of Blk. 5, Sur. No. 271.. T.D. 925 ft.; drlg.

WEST COLE POOL—WEBB COUNTY

Cole Pet. Co.'s No. 81 R. Benavides, 140 ft. from N line, 1,362 ft. from E line of Blk. 6, Sur. 412..... T.D. 2,342 ft.; comp. 80 bbls. dly.

Magnolia Pet. Co.'s No. 1 S. S. Benavides, 330 ft. from N line, 990 ft. from W line of Sur. No. 696..... T.D. 2,557 ft.; abd.

BYERSVILLE POOL—WILLIAMSON COUNTY

Fritz Fuch's No. 1 C. W. Johnson, 600 ft. from SE line, 700 ft. from NE line of tract in P. Cartwright Sur. ..... Drlg. 1,220 ft.; abd.; dry.

Taylor Prod. Co.'s No. 1 John Reiger, 150 ft. from NE line, 3,950 ft. from SE line of P. Cartwright Sur. ..... Derrick.

ALWORTH POOL—ZAPATA COUNTY

French Oil Corp.'s No. 1 M. Garza, 330 ft. from N line, 330 ft. from E line of Blk. 7, Sur. No. 281.... T.D. 2,040 ft.; abd.

ESCOBAS POOL—ZAPATA COUNTY

Texas Co.'s No. 40 Whitehead, 2,757 ft. from SE line, 20,987 ft. from SW line of Cerrito Blanco grant... T.D. 1,216 ft.; comp. 50 bbls. dly.

W. E. West and J. P. Perry's No. 1 Garcia, 1,200 ft. from NW line, 300 ft. from NE line of Share 3 of Comitas grant ..... T.D. 225 ft.; standing.

MARTINEZ POOL—ZAPATA COUNTY

W. R. Shankle and Wm. McGinley's No. 2 Manuel Trevino heirs, 330 ft. from W line, 150 ft. from S line of Blk. 15, Sur. No. 411 ..... Rigged up.

MIRANDO VALLEY POOL—ZAPATA COUNTY

Blair & Blankenship's No. 1 R. Hinnant, 450 ft. from S line, 300 ft. from W line of Blk. 16, Sur. No. 116.. T.D. 1,505 ft.; ran tubing; swabbing.

VILLA POOL—ZAPATA COUNTY

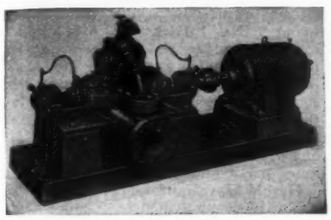
Danvers & Harrison's No. 1 Garza, 330 ft. from SE and NE lines of Blk. 102, Douglas Subd., Comitas grant.. Location.

NEW AND IMPROVED EQUIPMENT

Worthington Now Making Pump for Refinery Service

Following a study of pumping problems conducted in approximately one-third of the refineries in the United States, Worthington Pump & Machinery Corp., Harrison, N. J., is introducing a line of centrifugal pumps designed specifically for oil refinery service.

Ability to meet refinery requirements is evidenced in such features as steady



rising characteristic; low-suction velocities and oversize suction openings; oversize flanges adaptable to practically any special refinery flange requirement; grease-lubricated bearings requiring a minimum of attention; oversize fluid passages reducing possibility of particles of coke causing stoppage; high head per stage, reducing the number of stages and permitting lower rotative speeds; oversize taps for drain and vent connections; lubricated drain and vent cocks where required; cast iron baseplate and stuffing box covering when required for outdoor operation; minimum power requirements commensurate with the service performed and the reliability which must be maintained.

Safety in operation is increased by casings which will withstand hydraulic pressures greatly in excess of actual working pressures; shafts of ample diameter operating at low rotative speeds; extra deep water-jacketed stuffing boxes arranged with breakdown and bleed-off; steel split smothering glands which smother with water any leakage past the stuffing box, bronze-bushed to prevent sparking; arrangement of stages so that, even in high head pumps, there is never more than one stage pressure on any stuffing box.

Reliability is obtained through oversize ball bearings; shaft rotation below the lowest critical speed; hydraulicly balanced rotor; low velocities throughout the pump; vents on suction volutes and on first stage; the pick-up type of impeller held by two internal shaft nuts and fitted with double wearing rings; hardened stainless steel shaft sleeves; all-metallic coupling; high pump supports combined with water cooling to prevent unequal expansion and resulting misalignment; materials which have proved their ability to stand up in refinery service.

These pumps are of the convenient horizontally-split casing volute type, having suction and discharge nozzles integral with the lower half, thus making them as accessible as the usual general service water pump. They are furnished in one, two and four-stage arrangements.

Several articles of special interest to those having occasion to store large quantities of petroleum or gasoline are in the January issue of The Water Tower, published by the Chicago Bridge & Iron Works, Chicago. One of them describes the method by which the Empire Oil & Refining Co. stores blending stock in a welded Hortonsphere.

Among the Equipment Houses

The Oil Equipment Sales Corp., Houston, Tex., has appointed P. B. Hamilton to its Gulf Coast sales force, following his services as warehouseman since the organization of the company. Mr. Hamilton is succeeded by Howard Smith in the Houston headquarters office.

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A special train recently completed its cross-country run from the Atlantic Seaboard to Chicago carrying a large group of the marketing organization of Joseph T. Ryerson & Son, Inc., independent steel service company. The units began to collect in Boston, picking up the New York contingent, then the Philadelphia and so on to Chicago.

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Earl C. Smith, chief metallurgist of the Republic Steel Corp., Youngstown, Ohio, recently addressed a meeting of the Boston Chapter of the American Society for Steel Treating, January 5, at Massachusetts Institute of Technology, Cambridge, Mass., on "Stainless Steels."

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Recent changes in the selling organization of Goulds Pumps, Inc., Seneca Falls, N. Y., manufacturer of Goulds pumps and Hydroil purifiers, include the following: Maxfield Pease appointed district representative for the Cleveland, Ohio, territory, with an office at 4614 Prospect Avenue, Cleveland; William A. DaLee, 4829 Woodward Avenue, Detroit, Mich., district representative for the Detroit territory; Walter S. Bryde, formerly in charge of the Detroit territory, now covering western New York as factory salesman, with an office at 137 Linden Avenue, Rochester, N. Y.

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Howard Burnish has opened engineering offices in the Vandergrift Building, 323 Fourth Avenue, Pittsburgh, Pa. His services will be offered especially to the pipe industry in the designing of electric weld mills. Mr. Burnish formerly was connected with the A. O. Smith Corp., and more recently with the designing of the Spang-Chalfant Co.'s mill in Ambridge, Pa.

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S. M. D. Clapper has been elected president of the General Refractories Co., succeeding John R. Sproul, who resigned. Mr. Sproul also resigned as a director of the company and was appointed assistant to the president.

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Arthur R. Herske, for the last three years sales promotion manager for the American Radiator & Standard Sanitary Corp., has been appointed vice president and general manager of sales for the American Radiator Co.

Cletrac Diesel Added to Crawler Tractor Family

The Cleveland Tractor Co., Cleveland, Ohio, announces a Diesel crawler tractor in the 80-horsepower class, which develops 85 horsepower in second gear. Other than the engine, the Cletrac Diesel has the same specifications as the gasoline powered Cletrac 80. The heavy weight per horsepower of Diesel engines has been one of the chief objections to their use as power units for tractors. This objection is said to have been largely overcome in the Cletrac Diesel.

Development of satisfactory starting devices always has been a problem that handicapped the use of the Diesel engines for mobile power units. The higher compression of Diesel engines made it impossible to use the conventional types of starting equipment used with gasoline engines. However, starting the Cletrac 80 Diesel is as easy as starting the Cletrac 80 gasoline tractor, as electrical equipment of ample capacity is standard on the Cletrac Diesel. Another advantage of electrical equipment of this type is that it permits the installation of lights at a minimum expense.

FOR SMALL CIRCUIT BREAKERS

Self-supporting steel panels for mounting small oil circuit breakers for isolated installations have been announced by the General Electric Co. The equipment is suitable for use on underground systems up to 2,500 volts. The oil circuit breaker interrupting ratings are 20,000 to 50,000 kva. The special advantage of this equipment lies in the fact that it can be connected up and put into operation immediately upon its receipt as it requires no assembly of apparatus or adjustment of the breaker or mechanisms. All this work is done at the factory and the equipment is shipped in full working order.

Colmonoy Introducing New Type of Hard Facing Metal

Colmonoy, Inc., Los Nietos, Calif., is a new company organized to handle hard facing products, all of which have as their base Colmonoy crystals, a new metallic boride. J. B. Reilly and R. C. Grinnell of the Fluid Packed Pump Co. are associated with the new company. A. B. Leonard is the sales manager.

All Colmonoy products have two outstanding features: a combined property of toughness and hardness and a low specific gravity. For example, 1 pound of Colmonoy inserts (hard sets) contains the same number of equal-sized pieces as 2½ pounds of the average tungsten carbide.

Colmonoy "Sweat-On" is recommended for use on parts subjected to extreme shock, abrasion and oxidation. According to the manufacturer it opens a new field to hard facing and permits the economical solution of many problems formerly considered impractical. It is applied oxy-acetylene or electric. Bulletin 30, describing these hard-facing products, is mailed on request.

LENGTHENS LIFE OF RUBBER

A new liquid solution for application to mechanical rubber such as casing protectors, valve and piston rubbers, swab rubbers, packing and automobile tires has been developed by a Los Angeles manufacturer. It is said to restore the original vitality of the rubber by adding the essential oils and other ingredients that are usually driven off through volatilization and oxidation. Literature describing this liquid, which is marketed under the name of Nulife, shows microphotographs of rubber before and after application of the product. The bulletin can be procured by addressing the L. B. MacGregor Co., 317 Linden Avenue, Long Beach, Calif.

Unusual Cutting Action Is Feature of Sievers Reamer

The Security Engineering Co., Whittier, Calif., has appointed the Wilson Supply Co., of Houston, Tex., as exclusive Mid-Continent and Gulf Coast distributor for the Sievers reamer.

The Wilson company is appointing subdistributors so that the service on this tool may be complete.

The Sievers reamer has a unique cutting action in that the formation is attacked at an angle of shear and does not rely upon swedging, knurling or scraping action for formation removal. The cutter serrations or teeth are embedded in the reamer cutters in the form of sharp edged discs. Consequently, as the reamer body rotates, the cutters actually shear the formation. According to the manufacturer this provides an extremely fast and easy method of reaming.

A four-page folder, obtainable from the W. L. Walker Co., Inc., Tulsa, describes and illustrates the Tulsa oil thief, which embodies valuable features.

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The Caterpillar Diesel Seventy-five is the subject of a 48-page booklet which the Caterpillar Tractor Co., Peoria, Ill., is sending to those who ask for it.

STANDARD PACKAGES ADOPTED

The Mechanical Rubber Goods Division of the Rubber Manufacturers Association has adopted the following standard packages, effective January 2, 1934: Transmission belt, under 10 inches width approximately 250 feet of a width and ply, 10 inches and over in width any quantity; hog beater belt, 50 feet of a width and ply; hog beater paddles, 50 pieces or paddles of a width, length and ply; endless transmission belt (except farm belts), any quantity; conveyor, elevator, pulley lagging and grade belt, any quantity; sheet packing, red, C.B.S. and C.I., 100 pounds of a style and thickness; wrapped duck hose, up to and including 1½-inch size 100 feet of a size, ply and brand, sizes over 1½ inches 50 feet of a size, ply and brand; molded braided hose, 250 feet of a size, ply and brand; all hand-made hose, one length; metal-lined gasoline hose, five lengths of a size or a 50-foot length of a size; C.I. tubing, 250 feet of a size, ply and brand; pure gum tubing, 300 feet of a size and wall thickness; cotton rubber lined mill and fire hose (other than underwriters), both single-jacket and double-jacket 50 feet of a size; corrugated matting, 25 or 50-yard rolls of a thickness.

The Western Supply Co., Tulsa, which manufactures and sells oil field equipment in the Mid-Continent fields, has opened sales offices in the First National Bank Building, Dallas, Tex., with Eugene Solow in charge.

Rocky Mountain Area

(Continued from Page 54)

in the Sundance, the flow being estimated at 30,000,000 to 40,000,000 feet per day with 2,000 bbls. of water. The Producers & Refiners Corp.'s No. 4 Wertz, SW cor. SE Section 7-26-89, Wertz dome, is reaming to lower the 6¼-inch to bottom at 3,541 feet.

Goshen County

Joyce Hardy and others' No. 1 Peterson, SW cor. Section 21-22-63, Goshen Hole district, is shut down at 100 feet.

Niobrara County

Ed Shogren and others' No. 1 Olinger, NE NW Section 1-36-63, Old Woman Creek, is shut down just above 800 feet.

Converse County

Wyoming Southern Oil Co., R. G. Taylor and others has made a deal with Sidney H. Keoughan whereby the last named will drill a shallow test on the Shawnee structure 20 miles east of Douglas and 25 miles southwest of the Lance Creek Field, in their No. 1 Government, near the center of Section 27-32-69. These interests have 5,000 acres in a solid block. A light portable rotary will be used to go to a shallow horizon at around 700 feet where gas was encountered in a core drill test made by the Phillips Petroleum Co. The Phillips interests core-drilled the structure in 1930 and 1931 and are said to have been satisfied with the results, but encountered title difficulties when the Government claimed the mineral rights under the land leased. This land is now held under government permits. The Phillips company drilled near the center of Section 27 and encountered a flow of 1,000,000 feet of gas at 700 feet. Tests on opposite sides showed some oil.

The White River Oil Co. is reported to have encountered a small flow of gas at 128 feet in its No. 1 Silver, NW NE Section 33-32-71, 2 miles south of Douglas. After standing, the flow gauged 600,000 feet with a rock pressure of 21 pounds. Pockets of gas have been encountered in numberous tests in past years in the Douglas district, but no pools were discovered.

Hot Springs County

Empire State Oil Co.'s No. 4 Republic, NE cor. NW Section 14-44-98, Hamilton Dome, is drilling out plug after cementing the 6⅝-inch at 2,785 feet. It is headed for the Tensleep.

Lincoln County

An operation not heretofore reported is the Superior-Wyoming Oil Co.'s No. 1-A Government, SW NE NW Section 3-26-113, La Barge district, drilling at 320 feet. H. M. Eller and others' No. 1, SE cor. SW Section 32-19-116, Cumberland district, is drilling at 370 feet.

MONTANA

Glacier County

The Texas Co.'s wildcat in its No. 1 State, C NE Section 16-32-5w, South Cut Bank district, which extends the Cut Bank Field 9 miles to the south and east from the nearest producer, swabbed 258 bbls. in 24 hours on January 20. The airline distance from this well to the Santa Rita Oil & Gas Co.'s No. 2 Tribal, Section 15-35-6w, is 18 miles and it is believed where sand conditions are favorable that most of the intervening territory on approximately the same sand elevations will be productive. Thirteen miles farther to the north the Santa Rita company completed a small producer last year which may yet prove to be a continuation of the same structure. In any event, Cut Bank looks now as if it will be as large in area as the East Texas Field, though the production of the wells is in no way comparable. The Texas Co.'s No. 1 State topped the Ellis at 2,997 feet and the total depth is 3,008 feet. Saturation in the lower Cut Bank sand was found at 2,973-85 and 2,990-97 feet. Tanks are being erected and equipment is being moved in for a pumping test. The well was drilled under a dry hole agreement with the Montana Power Gas Co. and the Santa Rita Oil & Gas Co., both of which have large blocks in that district. L. R. Hannah and others' No. 1 Eniarson, SW NW NW Section 29-32-4w, 2½ miles southwest of the Texas well, which has been standing at 400 feet waiting for the completion of the other test, is expected to resume shortly.

Two new locations were reported, both in the north end of the field. These are the Texas Co.'s No. 1 Antrim, C Lot 4, Section 27-35-6w, and Lon Crumley's No. 2 Weaver, Lot 6, Section 27-35-6w.

Alberta-Pacific Consolidated Oil Co.'s No. 3 Matson, SW NW SW Section 41-34-6w, found the lower Cut Bank at 2,926-31 feet saturated, but has not yet made any test. The 6⅝-inch has been ecmented at 2,926 feet and total depth is 2,931 feet. A. B. Cobb's No. 2 Walburger, C NW SE Section 35-35-6w, began spudding January 19. Dunstall and others' No. 1 Kennerly, NE NW Section 22-34-6w, is shut down at 525 feet for new engine. R. C. Jeffries' No. 1 Clark, C SW SW Section 3-34-6w, is drilling at 1,575 feet, and the Montana Headlight Oil Co.'s No. 2 Williams, C NE NE Section 11-34-6w, is still shut down at 580 feet after cementing the 10-inch.

Olive Oil Co.'s No. 1 Winkler, E NW NW Section 35-35-6w, is bottomed at 2,750 feet and straightening crooked hole, and the Par Oil Co.'s No. 2 Haines, SE cor. SW Section 2-34-6w, has tools out and is cleaning out to lower the 8⅝-inch to bottom at 2,712 feet.

Santa Rita Oil & Gas Co.'s No. 1 Whetstone, SE cor. Section 27-35-6w, (Lot 8) is spudding at 300 feet, and its No. 2 Cardwell, C Lot 4, Section 15-35-6w, is drilling at 1,925 feet. Same company's No. 3 Tribal, C NW NW Section 15-35-6w, is drilling at 925 feet, and its No. 3 Yunck, C SE SW Section 14-34-6w, is drilling at 1,630 feet.

R. C. Tarrant's No. 2 Britton, SW NW SE Section 14-34-6w, is shut down for orders at 2,902 feet after another failure to make a shutoff with the 6¼-inch at 2,890 feet. His No. 3 Britton, C NE SW Section 12-34-6w, is standing rigged, and his No. 2 Haglund, Sr., C NW NW Section 13-34-6w, is fishing for tools at 2,450 feet. Tarrant's No. 1 Winkler, C SW SW Section 23-35-6w, is bottomed at 2,530 feet and cleaning out at 2,100 feet.

The Texas Co.'s No. 1 Haggerty, SE cor. Section 9-34-6w, is installing spudder with which to drill in at 2,998 feet, total depth. Pipe was cemented at 2,985 feet and core showed saturation. Same company's No. 1 Purdy, SE cor. SW Section 35-35-6w, is drilling at 2,735 feet, and its No. 1 Yunck, W NW SW Section 14-35-6w, is drilling at 175 feet with rotary.

Liberty County

Western Natural Gas Co.'s No. 1 Shaffer, SW cor. SE Section 14-37-4e, in the Whitlash Field, proved to be a surprise by coming in as a good well with indications that the pool will be of greater importance than past drilling indicated. It had a flow of 1,200,000 feet of gas at 2,120 feet and at 2,161-90 feet it encountered oil in a sand in the base of the Kootenai. It was then drilled to 2,190 feet, total depth. Oil rose 1,500 feet in the hole in four hours and then began to spray over the top. The tubing was run and it began flowing. No gauge was taken, but it is estimated at better than 100 bbls. per day. The oil tests 38.5 gravity on the Baume scale. This well is on the north flank of the structure, while No. 1 Hicks, C NW NE Section 26-37-4e, the discovery well for oil, is on the south flank. The Shaffer well missed the production in the basal member of tht Colorado shale, in which the oil, an average of 21 bbls. per day, was found in No. 1 Hicks at 1,815 feet, and continued on to the Kootenai. Several tests were drilled around the Hicks well in 1932 with only two or three being small producers. It is now believed that they did not go deep enough. The location is half a mile north of No. 1 Mahoney, the discovery gas well, and 1½ miles north of the Hicks well.

Harold Hayes and others' No. 1 Strode, NW SW Section 3-36-4e, 5 miles southwest of the Whitlash district, is drilling at 875 feet and had a show of free oil at 800 feet in the Bow Island sand.

Teton County

R. C. Tarrant's No. 1 Porter, SE cor. NE Section 35-27-5w, Pendroy district, is drilling at 2,000 feet.

Fergus County

S. W. Pennock and others' No. 1 Nordheim, Section 6-21-18, Scharf district, has resumed and expects the Eagle sand at 300 feet.

Petroleum County

Guy Smith and others' No. 1-A, SE cor. Section 3-13-26, Flatwillow district, was through the second Cat Creek sand at 1,340 feet and will test all horizons down to the Ellis. The sand was very hard and showed for about 1 bbl. per day.

California Fields

(Continued from Page 53)

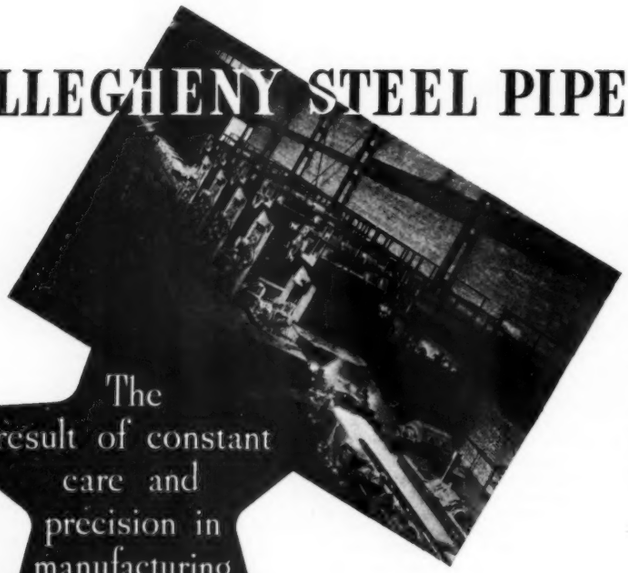
without any great success. During the test the well showed an initial flow of 2,805 bbls. of 26.5 gravity oil cutting approximately 20 per cent. It appears probable General Petroleum will permit this well to remain on production from its present depth, 8,372 feet. A new rig was recently erected on the Notten lease by General Petroleum and present plans contemplate drilling another deep test. No. 13 Notten will be carried to the deep 57 zone, discovered by Associated Oil Co. in 1932 and should be given a production test somewhere around the 9,000-foot level.

COLOR AND PROTECTION

The American Asphalt Paint Co. announces its new brochure, "Color and Protection," is ready for distribution. Having been awarded the contract to furnish and apply the paint for all major World's Fair buildings (inside and outside), this company has been especially interested in making the book an authentic record of the progress of color in industry. The Fair management has credited this book as being the only reproduction of the genuine flat color effects as designed by the late Joseph Urban. It is printed in 13 water colors, silver and gold and contains 35 of the finest reproductions of the actual buildings and actual colors yet created. A copy can be obtained free by writing, on company letterhead, to the American Asphalt Paint Co., 43 East Ohio Street, Chicago, Ill.

ALLEGHENY STEELS IN THE PETROLEUM INDUSTRY

ALLEGHENY STEEL PIPE



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THE quality of ALLEGHENY Steel Pipe begins in our own open hearth furnaces where the refined molten steel is run off into ingots. These ingots later pass through the great, modern ALLEGHENY Continuous Rolling Mill shown above which produces the flats or skelp from which ALLEGHENY Pipe is made. This is part of the 100 per cent control of ALLEGHENY Steel Pipe quality for which it is so widely known throughout the oil field industry.

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TECHNICAL QUESTIONS ANSWERED

By Charles K. Francis, Ph. D., Technical Editor

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible.

Inquiries must be signed but only the given initials will be printed. The source of the question is considered to be confidential

Questions requiring a discussion of patents, the use of intricate formulas, extended computations, or cost estimates cannot be considered.

When the matter is of general interest the reply will be published within a reasonable time.

Disastrous Oil Fire in Bordeaux Harbor Happened in 1869

There was a serious fire, so I am told, in an European harbor, about 50 years ago, as a result of flooding a ship which had a cargo of oil. I should like to get some details about this for use as an example of fighting an oil fire with water.—E. P. C.

The most extensive harbor fire of which we have a record, was that which started the night of September 28, 1869, at Bordeaux, France. The lighter Trinite was engaged in conveying the cargo of kerosene from the steamship Comte de Hainant. It appears that this vessel was loaded with oil in barrels and cases. The fire originated when a lantern was lit for the purpose of aiding a customs inspector to board the Trinite. A tug responded to the distress signal but while towing the lighter the flames reached the windlass holding the anchor, causing it to let go, resulting in mooring the lighter in the center of the harbor. While the boat was burning furiously the master of the harbor ordered the vessel to be sunk. This, a hazardous undertaking, was finally accomplished and at once the water was covered with blazing oil and cases. This conflagration moved about with the changing tides, destroying most of the shipping in the harbor.

As practically all of the vessels in the harbor were sailing vessels, built of wood, it was impossible to move or save them. Sixteen three-masters were destroyed, many more ships were damaged and a large number of lighters and small boats were lost.

This fire occurred only 10 years after the drilling of the Drake well, so little was known about fighting oil fires. Today, nobody would think of purposely sinking a vessel on fire which carried a cargo of oil.

Metallic Soap Base Greases Not Soluble in Water

Is it possible to manufacture a metallic soap base grease which will be soluble in water? As examples of metallic soaps we mention aluminum stearate, zinc stearate, etc.—H. W. M.

Greases are not definite chemical compounds but are mixtures of indefinite composition. Most greases, such as cup greases, are emulsions composed of lubricating oil, derived from petroleum, and water that are stabilized by the intermixture of a mineral soap, usually calcium. If any additional mineral element should be present, such as may be in a high magnesium hydrated lime, irregular composition and consistency result. In brief, the material called grease contains a large quantity of oil. Oil and water do not mix, so since the grease is simply an oily mixture it is not possible to make a grease which will be soluble in water.

The true soaps, which are compounds made from fatty acids and an alkali, are soluble in water. Those soaps made with the lower molecular weight fatty acids and sodium are soluble in cold water, the solubility decreasing with increase of molecular weight. The hard soaps made from the higher fatty acids are soluble only in hot water. However, when these soaps are combined with a petroleum oil in the form of a grease, the product, as such is not soluble in water. True soaps are sometimes used as lubricants.

Activated Charcoal Tested With Chloropicrin

We have been asked to find out some of the uses of chloropicrin. It appears that it is used for identifying some unsaturated compounds in natural gas and cracked petroleum distillates. Do you have any knowledge of this material? What does the chloropicrin test (as outlined in the discussion) identify?—R. D. M.

Chloropicrin is an organic chemical compound having the composition indicated by the formula CCl_3NO_2. Its chief uses are in the silk industry for killing the silkworm in the cocoon, disinfectant, insecticide, poison gas in warfare, in medicine, and in grading activated charcoal. The charcoal process is one method for extracting gasoline vapors from natural gas and it may be used for recovering gasoline from refinery gases. When unsaturated hydrocarbons are present in refinery gas, as from the cracking stills, they would also be adsorbed by the charcoal up to its capacity.

The first extensive use of activated charcoal was during the late war in gas masks and the chemists devised the chloropicrin test for grading the charcoal. The chloropicrin gas was passed through a known quantity of the charcoal until it was saturated. The time required to do this being stated in minutes, the longer the time the better the charcoal. A 50-minute charcoal is one requiring 50 minutes to show saturation under the conditions of test.

Chloropicrin test: This test consists essentially in passing a stream of air containing one part per thousand of chloropicrin through a layer of 8 to 10 mesh carbon 10 centimeters deep, in sufficient quantities to pass 500 cubic centimeters of the gas mixture per minute through one square centimeter of surface of carbon layer, until the effluent gas mixture imparts a distinct coloration to a copper flame.

The chloropicrin test, as outlined in the inquiry, simply shows the saturation point and does not signify the presence of any specific hydrocarbon.

Carbon tetrachloride, CCl_4, has been found to answer for this purpose, is easy to obtain in a pure condition, and is not so dangerous a poison as chloropicrin. The carbon tetarchloride test is made in a similar manner. The vapors, mixed with air, being passed through the charcoal at a temperature of about 32° F., into a gas flame, in which is suspended a piece of copper or a copper coil.

The endpoint is shown in both tests by the formation of a green color in the flame, caused by the decomposition of the excess of reagent beyond the holding capacity of the charcoal. Under the heat of the flame chlorin is set free, from either compound, to unite with the copper; the resulting copper chloride produces the green color.

The early literature relating to the adsorbing capacity of activated charcoal shows the values as based on the chloropicrin test, so it is sometimes desirable to convert carbon tetrachloride units to chloropicrin values by multiplying by three.

For a more detailed description of activated charcoal and the method for making the capacity test, see Burrell, "The Recovery of Gasoline from Natural Gas," pages 298 and 309.

Conditions Relating to Cracking Pressure Time and Temperature

I will appreciate it if you will advise me concerning high pressure, 150 to 200 pounds, cracking and fractionation.—F. F.

Some cracking processes maintain pressure throughout the towers and condensing system. Aside from materials and construction there are no additional physical laws to be considered in addition to those that apply to the conventional fractionating units.

The essential conditions for the cracking of petroleum fractions are related to pressure, temperature and time. The process of cracking will proceed without pressure but its use is favorable for the reaction, because the liquid may be heated to higher temperatures without excessive evaporation. When the temperature is held constant, changes in pressure do not greatly affect the yield. The pressure is usually varied with the character of the material to be cracked. The heavier the charging stock the lower the pressure that may be employed, that is, a fuel oil may be cracked under a lower pressure than kerosene. Commercial pressure cracking processes now operate at between 100 and 1,200 lbs./sq. in.

The time that the material remains in the cracking zone is the factor that controls the temperature. Good practice requires that the velocity of cracking should be such as to give between 16 and 20 per cent gasoline per pass. Higher yields usually result in large gas losses, formation of polymerized products and the deposition of carbon. The rate of cracking is considered to double for each 18° to 20° F. increase in temperature. The size of the cracking sections, movement of oil, and temperature are adjusted to the 16 to 20 per cent gasoline yield per once through passage of the charge.

The influence of pressure in the cracking operation is discussed in "Chemistry and Technology of Cracking," by Sachanen and Tilicheyev. Two experiments quoted from this book will serve to explain

CRACKING GROZNY MIXED BASE FUEL OIL

Gravity of Stock 24.7° A.P.I.

(The mixed base fuel oil was cracked for 33 minutes at 425° C.)

	Yield by weight on the charging stock			
Pressure—	Gases and loss (%)	Gasoline boiling below 200° C. (%)	Kerosene boiling at 200° to 300° C. (%)	Pressure distillate by weight (%)
10 atmos.*..	2.7	9.8	15.2	11.1
20 atmos....	4.9	9.7	14.1	3.5
30 atmos....	6.1	9.8	14.3	0.0
40 atmos....	7.6	9.9	15.3	1.0

*1 atmos. = 14.5 lbs.

The figures in the last column give the percentage of pressure distillate obtained by cracking in the above experiment.

The results show plainly that the pressure has no influence on the yield of light products of cracking in the first cracking stages, i.e. on yields of cracked gasoline and cracked kerosene.

CRACKING BAKU HEAVY GAS OIL DISTILLATES AT VARIOUS PRESSURES

Gravity of Stock 27.5° A.P.I.

	Cracking conditions		
No.—	Temp. (° C.)	Pressure (Atmos.)	Duration (Min.)
5.....	450	10	48
6.....	450	20	51
7.....	450	40	52
8.....	450	100	59

	Yield by weight of cracked products			
No.—	Gases and loss in cracking (%)	Fraction below 200° C. (%)	200° to 300° C. fraction (%)	Pressure distillate by weight (%)
5.....	13.3	33.4	29.1	56.4
6.....	10.0	31.1	25.5	35.9
7.....	13.2	31.4	23.1	10.1
8.....	27.5	32.5	21.0	0.0

Figures obtained on cracking heavy Baku gas oil show that the yield in cracked gasoline at high pressures is 2 per cent lower than at 10 atmospheres. The yield of cracked kerosene simultaneously decreased 3½ to 6 per cent.

Some Properties of the Natural Gasoline Hydrocarbons

Will you please advise where I can secure a chart showing the specific gravity, molecular weight and specific heat of saturated and unsaturated hydrocarbons in natural gasoline?—C. E. B.

The principal constituents of natural gasoline are the normal paraffin hydrocarbons and isomers ranging from butane to, and including, heptane. Where the fractionation has not been sharp, traces of propane and small quantities of the higher hydrocarbons just above heptane are found. There are no unsaturated hydrocarbons in natural gasoline.

The constituents for the normal hydrocarbons of the natural gasoline group are shown in the table.

NATURAL GASOLINE HYDROCARBONS

Name—	Specific gravity, water=1	Mol. wt.	Specific heat, B.t.u./lb.
Butane	0.600	58	0.456
Pentane	0.645	72	0.448
Hexane	0.660	86	0.442
Heptane	0.733	100	0.504

The properties of the paraffin hydrocarbons up to and including octane were published in The Oil and Gas Journal, July 23, 1931, page 102.

PERSONAL PARAGRAPHS

W. E. RAMSEY, independent oil operator of Oklahoma City, Okla., has recuperated from an appendix operation.

* * *

FRANK D. MANNING, formerly a petroleum engineer with the Continental Oil Company, has joined the U. S. Geodetic Survey.

* * *

PAUL A. WALKER, chairman of the Oklahoma Corporation Commission, has returned home from a visit in Washington, D. C.

* * *

O. W. JOHNSON, co-ordinator of the Pure Oil Company, Chicago, is spending a few days on the Gulf Coast, visiting the Smiths Bluff refinery.

* * *

FRED P. DODGE, general superintendent of refineries, Texas Company, Port Arthur, Tex., is convalescing from a long illness and major operation.

* * *

R. C. POWELL, chief engineer, refining department, the Texas Company, New York City, is making a tour of the company's Gulf Coast refineries.

* * *

CHARLES B. WRIGHTSMAN, JR., president, Standard Oil Company of Kansas, Houston, Tex., accompanied by his wife, is spending a short vacation in Florida.

* * *

H. G. MEADOR, formerly assistant district sales manager, Gulf Refining Company, New Orleans, La., has been made district sales manager succeeding W. J. TESELLE, retired.

* * *

GURNEY PEEPLES, in charge of the Gulf Coast district for Black, Sivalls & Bryson, Inc., was a business visitor in Fort Worth, Tex., during the week, returning to Houston, Tex., via the East Texas Field.

* * *

TED EVANS, efficiency engineer for the Skelly Oil Company, Tulsa, has completed an inspection trip in the East Texas Field.

* * *

W. H. FERGUSON, regional director for Region 5 under the NRA code, has returned to Denver, Colo., from Great Falls, Mont., where he attended a meeting of oil men at which was organized the Montana Petroleum Industries Committee.

* * *

JOHN R. KEANE was re-elected president of the Western Asphalt Association at the 1934 annual meeting, at which time the association also voted to take an active part in the fight to prevent diversion of gasoline tax for nonhighway purposes.

* * *

R. E. COLLOM, vice president of the Continental Oil Company, has been elected president of the Kettleman North Dome Association, succeeding JOHN A. BROWN of the General Petroleum Corporation, who recently resigned due to the fact that a considerable portion of his time will be spent in New York.

* * *

FLOYD GAUNT, vice president of the Reynolds Gas Regulator Company, Anderson, Ind., announces the appointment of G. H. UNKEFER as the company's representative in California. Mr. Unkefer has been identified with the oil and gas industry on the Pacific Coast for the past 11 years. Since 1932 he has been in charge of sales for the American Recording Chart Company, Los Angeles, which connection he will retain.

GEORGE D. LOCKE, vice president of the Barnsdall Refining Company, returned to the Chicago offices of the company the first of the week from a trip to New York City.

* * *

H. D. JORDAN, formerly manager Pan American Petroleum Company, New Orleans, La., has been appointed district sales manager, Gulf Refining Company, New Orleans.

* * *

JOHN A. RITTER, general superintendent of the Sun Oil Company, Dallas, Tex., has been named a member of the committee on disposal of production waste by the American Petroleum Institute. H. M. STAGGS and W. A. SNIFFEN, two other Dallas men, have been placed on the central committee on standard procedure for measuring, sampling and testing crude oil.

* * *

T. T. LEMIN, L. O. GRIFFITH, RAY ZIMMERMAN, BART ABERCROMBY, of the Pan American Petroleum Company, Whiting, Ind., have been transferred to Texas City, Tex. Mr. Lemin will be night superintendent; Mr. Griffith, assistant night superintendent; Mr. Zimmerman, day superintendent, and Mr. Abercromby, superintendent of steam and power, of the Pan American Refining Company's new plant which is nearing completion.

* * *

MISS GRACE STEWARD, formerly secretary to HORACE FITZPATRICK and R. M. GAWTHROP, of the old Prairie Oil & Gas Company in Tulsa and other officers for about four years, has been made secretary to CLYDE ELLWOOD, the newly appointed commissioner of code authority for the Mid-Continent and Rocky Mountain divisions of the American Petroleum Equipment Industry and Trade and will be in charge of the office at Suite 502, Tulsa Building, Tulsa.

W. A. MONCRIEF, of Showers & Moncrief, Fort Worth, Tex., is in Houston, Tex., on business.

* * *

MARRS McLEAN, independent oil operator, and family, Beaumont, Tex., is taking a six months' trip around the world.

* * *

R. C. OSTERTRAM, executive assistant of the Pure Oil Company, Chicago, is spending a few days in the Smiths Bluff refinery.

* * *

E. W. ISOM, vice president of the Sinclair Refining company, New York, has been visiting the East Chicago, Ind., refinery of the company.

* * *

C. B. AMES, chairman of the board of the Texas Corporation, will be the guest and chief speaker of the Bond Club of New York City on February 7.

* * *

A. D. STIVERS, manager of the asphalt sales department of the Texas Company, Dallas, Tex., spent a few days in the company's Port Neches refinery.

* * *

M. HALPEM, assistant manager, refining department of the Texas Company, New York City, is spending a few days in Port Arthur, Tex., visiting the company's refinery.

* * *

MAX STEINBUCKEL, independent oil operator and a partner in the discovery well in the Raymond Pool, Rice County, Kansas, has a string of 10 racers which he is entering in the national events.

* * *

C. A. WARNER, formerly assistant chief geologist of the Houston Oil Company, has been made superintendent of the newly formed separate land department of that company. PHIL MARTIN continues as head of the geological department.

* * *

J. C. WALKER, of the Empire Oil & Refining Company, Bartlesville, Okla., recently spent several weeks in New York on business.

* * *

J. A. SIVALLS, vice president of Black, Sivalls & Bryson, Inc., Bartlesville, Okla., has returned to his home after a week's trip into Texas.

* * *

C. L. WAGNER, chief geologist of the Ramsey Petroleum Corporation has returned to Greeley, Colo., from Oklahoma City, Okla., in connection with plans of the company to undertake additional exploration work in northeastern Colorado.

* * *

ATTORNEY W. J. McFARLAND, bailiff in the appelate department of the Superior Court of Los Angeles, Calif., has been granted a six months' leave of absence in order to assist WEBB SHADLE, attorney for the state division of lands, in prosecuting Huntington Beach oil suits involving tideland exploitation.

* * *

CHARLES BUNJE, JR., president; J. C. DONNELL II, vice president, of the Illinois Pipe Line Company, Findlay, Ohio, have completed an inspection trip through Texas. H. D. McCRACKEN, vice president of the company, Fort Worth, Tex., accompanied them on the East Texas, Gulf Coast trip. J. S. HASSEN, division superintendent of the Ohio Oil Company, Shreveport, La., and L. J. (JACK) LYNCH, general superintendent of the Mid-Kansas Oil & Gas Company, Henderson, Tex., accompanied the party on part of the trip.

DO YOU REMEMBER?

From The Oil and Gas Journal Files

25 Years Ago

February 1, 1909

Dana H. Kelsey, U. S. Indian agent at Muskogee, reports that 41,101,000 bbls. of crude oil was produced and marketed in the Creek and Cherokee Nations in 1908, almost double the quantity recorded in 1907, which was 21,717,000 bbls. There are 36,000,000 bbls. of oil in storage in the two nations.

Attorney General West of Oklahoma, indefatigable "octopus" hunter, is ferreting out whether or not stockholders in the Gulf and the Texas Pipe Line Companies in Oklahoma are also stockholders in the Standard Oil Co.

Benjamin Andrews, Sr., successful operator in the Spindletop Field, dies in New Orleans. He was 77 years old.

20 Years Ago

February 5, 1914

The Oil City Derrick says a wide strip extending from the Newkirk Pool in northern Oklahoma to Electra, Tex., is good wildcatting territory and that it covers as much ground as the whole Pennsylvania Grade oil field.

A refinery for furnishing the oil supplies of the United States Navy, is being discussed and various oil cities are asking for it.

Walter Grubb, former drilling contractor, and ex-sheriff of McKean County, Pennsylvania, dies in Niagara Falls, N. Y.

The Magnolia Pipe Line Co.'s line from Texas to the northern Oklahoma fields is under construction.

10 Years Ago

January 31, 1924

Marland Oil Co. has sold J. P. Morgan & Co. 300,000 shares of heretofore unissued stock and given an option on additional stock, said to be 335,000 shares. The price of the stock sold is reported to have been $30 and of the stock to be sold, $40 per share.

Champlin Refining Co. is paying 50 cents per barrel premium for oil in the Garber Pool in Oklahoma.

Harry Gaffney, who operated in the Pennsylvania and Oklahoma-Kansas fields with Ike Simons and with Jay Bird, dies in Tarpon Springs, Fla., his winter home.

ROY SEITZ, independent operator, of Wichita Falls, Tex., was a business visitor to Fort Worth, Tex., the past week.

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H. M. STALCUP, vice president of Skelly Oil Company, has been confined at his home in Tulsa as the result of illness.

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DR. G. N. BYRKIT, University of Minnesota, recently joined the research department of the Continental Oil Company at Ponca City, Okla.

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F. E. SPOONER, of Calgary, prominently identified with the Alberta oil industry, has been elected president of the Calgary Board of Trade.

* * *

GEORGE C. McGHEE, of the geophysical department of the Continental Oil Company, was recently selected as the Rhodes scholar from his district.

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JOHN A. RITTER, of the Sun Oil Company at Dallas, Tex., has been made a member of the committee on disposal of production waste by the American Petroleum Institute.

* * *

WALLACE GORDON, chief geologist in the Mid-Continent for the Superior Oil Company of California, has been spending some time on company business in Denver, Colo., in the past week.

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CARL MODESITT, president, and W. A. SNYDER, vice president, of the Texas Potash Company, of Denver, Colo., are in New Mexico in connection with plans to start core testing the company's holdings southeast of Artesia.

* * *

L. E. BARROWS, division manager of the Texas Company, and STANLEY A. THOMPSON, president of the Westbrook-Thompson Holding Corporation, both of Fort Worth, Tex., have been elected to the directorate of the Chamber of Commerce of that city.

* * *

HARRY HOHENUDEL, Empire Oil & Refining Company, Tallant, Okla., has returned from a visit to Chicago.

* * *

S. P. FARRISH, president of the Navarro Oil Company, Houston, Tex., and wife, are in Florida on a visit.

* * *

E. J. NICKLOS, vice president and general manager of production, and JOSEPH E. DYER, general manager of pipe lines for the Continental Oil Company, both of Ponca City, Okla., are on a tour of inspection of the Continental properties in North and Northwest Texas districts.

* * *

DR. KENNETH R. FOURCHER, of the International Petroleum Company, Toronto, Canada, accompanied by MRS. FOURCHER and children, left New York City, Saturday, January 27, on the Santa Barbara of the Grace Line. Doctor Fourcher is connected with the South American operations of the International company.

* * *

J. ROLAND (BUCK) JOHNSTON, formerly with the Pierce refinery, the Skelly Oil Company, the Carter Oil Company and eastern representative of Robert M. Briggs, Inc., last year and more recently with the Continental Oil Company in the mechanical research laboratories, is now associated with W. A. HUBLER in the royalty business, Tulsa.

* * *

CLYDE ELLWOOD, formerly vice president for the Axelson Manufacturing Company, Los Angeles, Calif., has been appointed commissioner of code authority for the Mid-Continent and Rocky Mountain districts of the American Petroleum Equipment Industry and Trade setup under the NRA code. Offices are being established in Suite 502, Tulsa Building, Tulsa, telephone 3-8726.

He Chased Submarines and Whales

Oil derricks and the bubble towers of a modern refinery have replaced the masts of an Arctic schooner in the affections of John Borden, of Muskegon, Mich., and Chicago, now president and general manager of the Old Dutch Refining Company and several affiliated pipe line and producing companies and recently named secretary of the Michigan Refiners Association.

JOHN BORDEN

Mr. Borden made several voyages to Alaska and the Arctic regions and was placed in command of his own yacht during the World War when he offered it to the Government as a submarine chaser. He first served in France as an ambulance driver in 1915. When the Lusitania was sunk he came back to the United States, confident this country would enter the war at once. Disappointed in this expectation, he went on an Arctic whaling and trading expedition. Back in Chicago after an adventurous trip, he bought a steam yacht and conditioned it for war service. He was commissioned a lieutenant commander U.S. N.R.F. and for 18 months pursued German submarines in the English channel, Bay of Biscay and North Sea.

Following the close of the war business ventures, big game hunting and another Arctic expedition filled an eventful decade. Then Mr. Borden entered the refinery business in Muskegon with Ernest L. Hughes, Walter E. Anderson and Walter Schuttler, all of Chicago. They were the original backers of the Old Dutch refinery.

Mr. Borden was born in Chicago, May 21, 1884. He received his A. B. from Yale in 1906 and two years later graduated in law at Northwestern University. He was admitted to the Illinois bar, but changed his plans and with two associates organized the group of Yellow Cab companies. He sold his interests in 1920 at a profit of several million dollars. He is a member of the Arctic Brotherhood, Delta Kappa Epsilon, Phi Beta Kappa and of several clubs.

SIDNEY H. KEOUGHAN has returned to his Casper, Wyo., offices after a trip to the Dry Creek oil and gas field in southern Montana.

* * *

R. G. TAYLOR, of Denver, Colo., was in Casper, Wyo., last week, on business connected with the Wyoming Southern Oil Company, of which he is the head.

* * *

JOHN T. BARNETT, of the Mountain Producers and other Salt Creek companies, was in Casper, Wyo., recently, checking up on operations in the Salt Creek Field.

* * *

JIMMY HAYNES, formerly district sales agent for the Alton Foundry & Machine Company, of Mario, Ohio, is now with the Oil Well Supply Company in Mount Pleasant, Mich.

* * *

SAM McKECHNIE, drilling in the Haldimand, Ontario, gas field, is in a hospital at Dunnville, Ontario, recovering from a serious accident. Mr. McKechnie was caught in a drilling rig, his right arm being broken and two ribs fractured.

* * *

S. L. CRONIN, of the Pure Oil Company, has been transferred from Midland, Mich., to Houston, Tex., where he will have charge of the land and scouting departments for the company there. Mr. Cronin has been chief of the Pure company's land department in Michigan with headquarters in Saginaw.

* * *

MR. AND MRS. DAN GRIFFIN, of Laramie, Wyo., spent the week-end in Casper, Wyo., as guests of MR. AND MRS. P. W. HENNESEY. Mr. Griffin is with the Rocky Mountain Gas Company at Laramie, and Mr. Hennesey is in charge of the western division of the Illinois Pipe Line Company with Casper headquarters.

ROBERT SNOW, of the Phillips Petroleum Company, is in the East on a business trip.

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L. S. CANNON, of the Continental Oil Company, has been visiting the Baltimore, Md., refinery.

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J. K. V. STEWART, Mid-Continent Petroleum Corporation, has returned from a visit to Mississippi.

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ROBERT CARR, independent operator at San Angelo, Tex., was a business visitor to Fort Worth, Tex., the past week.

* * *

E. H. ROSENBERG, of Los Angeles, Calif., visited Lethbridge, Alberta, recently on business connected with the Nordon-Roney test south of Lethbridge.

* * *

G. RAYMOND, chief engineer for Black, Sivalls & Bryson, Inc., has returned to his home at Oklahoma City, Okla., after a several weeks' business trip to the West Coast.

* * *

W. S. HYNES, of Vancouver, British Columbia, secretary-treasurer of Pacalta Oils, Ltd., recently inspected the drilling operations of that company in the South Turner Valley Field.

* * *

EARL CRAIG, of Vancouver, British Columbia, visited the South Turner Valley Field recently in connection with drilling operations of the Mar Jon Oil Company of which he is president.

* * *

FRANK RACHER, who has been drilling for Columbia Oils, Ltd., in the Sage Creek area of British Columbia, is spending a few weeks with MRS. RACHER and family at Petrolia, Ontario.

* * *

GEORGE W LICHTENBERGER and ALFRED J. BAYER were re-elected president and vice president, respectively, of the Rice Ranch Oil Company at the annual meeting of the company.

* * *

E. C. MONCRIEF has been elected president of the Kansas Geological Society at Wichita, Kans.

* * *

WILLIAM C. GITTINGER, who has been advertising manager of the Tide Water Oil Company, New York City, has resigned to become director of the sales department of the Columbia Broadcasting System. He has been succeeded in the Tide Water organization by F. B. HENDERSON, formerly in charge of advertising at the Tulsa offices of the company.

* * *

FRANK GRIFFIS, of Houston and Port Arthur, Tex., who has been with the auditing department of the Texas Company since he graduated from the University of Texas, has been made general auditor for China of the Texas Company. After a visit to his sister, MRS. J. O. GARRETT, at Austin, Tex., he left for Shanghai, which will be his headquarters for three years.

* * *

RALPH H. PRICE has been selected as chief chemist of the Pan American Refining Corporation at its new refinery which is nearing completion at Texas City, Tex. Mr. Price has been a member of the staff of the research laboratory at the Whiting, Ind., refinery of the Standard Oil Company (Indiana). He has been in charge of certain phases of cracking research.

* * *

DR. E. H. SELLARDS, director of the Bureau of Economic Geology of the University of Texas, Austin, is to administer a $3,000 grant from the Penrose Fund of the Geological Society of America, intended for a group study to establish more satisfactory criteria for the stratigraphic correlation of the Mississippian, Pennsylvanian and Permian sediments in Texas. It will require the work of four members of the Bureau of Economic Geology and all of 1934 to complete.

FIELD PROBLEMS FROM READERS

Edited by Thomas F. Smiley

This department is conducted in order that men connected with the drilling, producing and transporting branches of the petroleum industry may obtain aid in solving problems that confront them in their work. Readers are invited to send questions freely. These questions will be placed in the hands of persons capable of answering them authoritatively, and the answers, based on the best available information, will be published.

Each question should give as much detail as possible, especially if it involves depth of sands, types of sands and operations on adjoining or nearby properties. The source of questions will be considered confidential, and only the initials of the sender will be published. Questions involving patented processes, intricate formulas or estimates of cost cannot be answered. If an immediate answer is important, one will be given by mail when the writer requests it.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or improved old ones.

Trying to Increase Oil Recovery With Steam May Be Costly

Would steam introduced into an oil sand increase the oil recovery? I am told that this plan has been tried with success. I am situated so that I could use this method if it really would bring results. I know little about petroleum engineering, but this plan looks good to me and I would like to have your advice.—L. N. O.

While you do not outline any method that you propose to use it is assumed that your idea is to drive steam into the formation under pressure from a surface boiler plant and remove the oil from adjacent wells. Patents covering a somewhat similar process have been granted for recovery of sulphur and many properties have been and are being operated by this method.

Reviewing early patents granted for mining of oil sand it is found that in November, 1865, the United States Patent Office granted patent No. 50,903 to Paul Casamajor, of New York, for an "Improved Mode of Operating Oil Wells." Mr. Casamajor proposed to sink shafts, run drifts and drill short wells into the oil sands from the bottom of these drifts. This indicates that when the oil industry was just beginning men were contemplating the possibilities of mining the oil sand to get the oil.

Numerous other patents have been granted in this country and abroad covering processes to be applied to mining that would in the inventor's opinion, safeguard the miners and increase the recovery. As this idea has been developed by many men it is not strange to find that patents have been granted for methods by which heat can be applied to the oil sands direct.

Delos R. Baker, Delaware, Ohio, was granted two of these patents, the first dated April 9, 1907, and covering a "Process of Extracting and Recovering the Volatilizable Contents of Sedimentary Mineral Strata" by which he planned to sink twin shafts and drive a cross-cut tunnel from the bottoms connecting them. It was proposed to place an electric heating element in the connecting tunnel and after closing the shafts by suitable means to introduce an electric current into the heaters buried in the oil formation and heat it to the temperature where the oil would volatilize and the vapors would pass to the surface through the shafts and be condensed into liquids.

On August 11, 1908, Mr. Baker received a second patent entitled "Apparatus for Extracting the Volatilizable Contents of Sedimentary Strata." In this patent Mr. Baker proposed to force steam down pipes in one shaft and permit the steam to pass through the oil saturated formation and escape into a second shaft from which it would be conducted to a drum at the surface and precipitated.

Both patents cover the same general idea of heating the volatile hydrocarbons in place in the formation and driving the vapors to the surface where they are precipitated. The difficulties are many and it is understood that the patents were never used or the idea tried out. One of the principal difficulties is found in trying to conduct steam into the earth because it will condense in the pipes and the water will mix with the oil and it is doubtful if it would be hot enough to do any good at a short distance from the bottom of the shafts.

Many other ideas have been suggested for heating oil in place but most inventors have apparently had little idea of the stratigraphy of oil bearing formations, failing to realize the many different characters of material that go to make up what is termed an "oil sand." In very few instances is it pure sand. The oil bearing formations are usually sedimentary in nature. The materials were carried to the places now found by water movement. Change in rate of water currents varies the type and size of the sediments carried.

This condition of the formation makes it almost impossible to drive steam far into the oil sand. Without more details of the process you have in mind for injecting steam into the formation from the surface the idea is not believed feasible. There are so many proven methods of increasing recovery it seems probable that the cost of developing and testing live steam or other form of heat makes it economically impracticable.

Wants Average Costs of Drilling Wells in East Texas Field

Please advise me what the average cost of drilling oil wells in East Texas is. I would like to have this average cost include everything except lease and tanks.—B. H. A.

It would be difficult to arrive at an average cost for equipping East Texas wells because almost every conceivable type of equipment has been used in drilling and putting these wells on production. Furthermore, drilling costs have been reduced from $3.50 to $1.50 or less per foot. Many wells have been drilled upon a contingent fee to be paid out of oil as and when produced.

The following cost figures for good equipment for an East Texas well are based upon specifications for good material throughout, which will pay in the long run:

DRILLING

Derrick (94-ft. steel pumping type including bullwheel girt and crow's nest)	$1,116.25
Slush pits	100.00
Surface casing (10-in. 40-lb. seamless set at 150 ft.)	186.00
Cement—50 sacks	45.00
Cost of cementing	75.00
Fuel oil or gas for drilling	600.00
Water for boiler and rig	500.00
Drilling at $2 per ft. (3,660 ft.)	7,320.00
Casing (7-in., O.D. 24-lb., 10-thread seamless—3,590 ft.)	5,097.80
Cement—150 sacks	135.00
Cost of cementing	225.00
Tubing (3,640 ft., 2½-in., 6½-lb., 10-thread)	1,501.40
Welding	25 00
Miscellaneous equipment	75.00
Teaming and hauling	500.00
Total	$17,501.45

HOOK-UP

Tubing head	$106.00
Christmas tree	235.00
Upset nipples	6.50
Valves, fittings, etc.	100.00
Separator	505.40
Tank (one 1,000-bbl.)	481.20
Pipe	600.00
Fittings	200.00
Labor	50.00
Miscellaneous, tools, etc.	200.00
Total	$2,484.10
Total drilling	$17,501.45
Total hook-up	2,484.10
Grand total	$19,985.55

From these figures which have been carefully compiled it seems safe to estimate that an East Texas well will cost not less than $20,000 properly drilled and completed.

Why Was It Called That?

SEDIMENTATION

Sedimentation, to which the petroleum geologist frequently refers, gets its name from the Latin "sedimentum," from "sedere," to sit. One interesting form of sedimentation is that seen in the transportation and deposit of dust. This takes place over the entire earth and it is probable that every square mile of the earth's surface contains dust from every other square mile. Sandstorms in the Sahara Desert leave clouds of reddish fine sand and dust in the air for a long time, and this material gradually settles over the land. Contrary to common belief, says A. W. Pond, who recently returned from an exploration of the Sahara, that desert is not a vast stretch of sand. "I covered more than 3,000 miles on one of my four expeditions, and only about 300 miles of it was sand. Nine-tenths of the desert is hard rock, gravel plain and clay plateaus."

No Difficult Problems Found in Development of Water Flood

I read with interest your article in a recent issue of The Oil and Gas Journal in answer to a question about the different spacing patterns employed in flooding operations in the Bradford Field. May I ask you to tell just how the flooding operation itself is accomplished, aside from the matter of spacing and the location of the water wells? Are the water wells shot? What tubing and casing are used in the oil wells? What pipe is used in the water wells? What kind of water pumps are used? Any other information will be welcome. Does this flooding operation present any serious engineering problem?—E. R. T.

This department is indebted to K. B. Nowels, petroleum engineer of the Forest Oil Corp., for the following information in reply to your question:

The development of water floods in the Bradford Field does not present any difficult engineering problems. After drilling has ceased, a well is shot with about 80 quarts of nitroglycerin and any loose sand which may have run into the hole is cleaned out. All water intake and oil wells alike are shot, as better results in flooding are obtained.

Water wells are equipped with nothing but plain 2-inch, 2,000-pound test tubing and a plain flood packer, which is set at the top of the oil sand and cemented with 10 sacks of cement. The formation above the oil sand to the surface of the ground is a firm shale and not subject to caving. The oil well is equipped with about 40 feet of 8¼-inch casing as conductor pipe, and then approximately 350 feet of 6¼-inch to exclude the water-bearing gravel bed usually lying within 150 feet of the ground surface. No other casing is used in the well. Plain 2-inch tubing is also used in the oil well and is set with the pump barrel at the top of the producing sand, so as to reduce to a minimum the accumulation of paraffin on the sand face. Oklahoma type pumping jacks are generally used in pumping, with the usual post-supported rod lines extending from the bandwheel power to the pumping wells. It is customary to have one bandwheel power pump about 36 wells.

Each water intake well is usually equipped at the surface with an individual water meter, boxed over and protected with straw or hay to prevent freezing in winter. Our company takes daily readings of these meters and it is possible at once to detect when a well is not taking the proper amount of water. Distribution lines connecting all water intake wells usually consist of 2-inch line pipe, which in turn are connected to main feeders of 3 or 4-inch pipe leading to the central water pressure plant. Pressure plants usually house several pump units, a unit consisting of a triplex water pump, belted or direct connected to a 25 or 40-horsepower gas or oil engine. The water pumps generally used have 3 or 4-inch diameter plungers with 10 and 8-inch strokes. Our company finds the 3x10 triplex a convenient size, as it has a capacity of 62 U. S. gallons per minute at a speed of 68 r.p.m. under 1,400 pounds pressure per square inch. This output is equivalent to 2,100 bbls. per day and will supply approximately 60 water intake wells. A few operators use electric centrifugal pumps for pressure service.

NATURAL GAS DEVELOPMENTS

Hendee Again Named President of O. N. G. Co.

Robert W. Hendee was elected president of the Oklahoma Natural Gas Corp. at a directors meeting January 26. He

ROBERT W. HENDEE

had been serving as executive vice president. A. E. Bradshaw, who resigned as president to become president of the National Bank of Tulsa and was chosen chairman of the board, remains in that position.

Mr. Hendee has been associated with the gas company for 13 years, beginning as an employe in the gas measurement department. He had been assistant to the vice president in charge of operation when he was elected vice president in charge of operation, later being elected president, which position he filled for about 12 months, until the reorganization of the company, when he was succeeded by Mr. Bradshaw.

When Mr. Bradshaw resigned to accept the bank presidency Mr. Hendee was made executive vice president in charge until a new president would be elected. Now he is again president.

Mr. Hendee said he appreciates the splendid co-operation manifested generally during the time the affairs of the company have been straightened out.

"There is still a battle ahead of us," the new president said, "but we are going to win out."

GAS PIPE LINE INQUIRY

WASHINGTON, D. C., Jan. 27.—Three companies operating natural gas pipe lines extending from the Texas Panhandle to Chicago, were taken up by the Federal Trade Commission in a hearing this week. They are Texoma Natural Gas Co., Natural Gas Pipe Line Co. of America and Chicago District Pipe Line Co. The latter company is owned by interests distinct from the other two companies. Texoma Natural Gas Co., the producer, supplies from a station in Beaver County, Oklahoma, about 75 per cent of the gas required by Natural Gas Pipe Line Co. of America which takes care of the transportation, owning a pipe line extending from Beaver County, Oklahoma, to Joliet, Ill. The Chicago District Pipe Line Co., Chicago, distributes the gas to three companies which serve gas consumers in Chicago and its vicinity. The hearing is in connection with the commission's investigation of power and gas utilities being conducted under Senate resolution.

GROWTH OF GENEVA FIELD

GENEVA, N. Y., Jan. 27.—The possibility that Geneva may become the key city to one of the largest natural gas fields in New York State is seen in the announcement that the field now has 30 producing wells with a total production of 126,787,000 feet initial production. Seventeen other wells drilled produced so little that they could not be considered of commercial value. No gas has been sold other than for drilling purposes and to date there have been no published plans for pipe line construction or marketing.

Practically all farm land within a radius of 30 miles is under lease north of Geneva.

Seeks Appropriation for Amarillo's Helium Plant

AMARILLO, Tex., Jan. 27.—Representative Marvin Jones, of Amarillo, is to appear before a subcommittee on appropriations to urge a definite allotment in behalf of Amarillo's government helium plant. Appropriations for helium investigators during the fiscal year ending June, 1932, were $74,760; ending June, 1933, $50,000; for the year ending next June, only $29,000. For actual operation expenses, the plant received none of the Navy's $100,000 helium item during the present fiscal year, and was restricted to $47,000 of unexpended balance from 1933, plus $17,000 transferred in 1934 from the Army. Thus, with only $64,000 for plant operation during this fiscal year, as compared to $184,000 the previous year, in addition to the drastic reductions in the helium investigations appropriation, nearly one-half of the bureau's per annum employes engaged in helium activities in Amarillo were separated from the service last July. Besides these per annum employes, about 25 laborers at the plant were thrown out of work.

The entire amount appropriated to the Army and Navy for helium activity under the new budget is only around $110,000, and there is to be no reappropriation of unexpended funds from these departments this coming year. Consequently, unless some is made available through the "investigation" item, for research, it is doubtful whether the plant can continue to operate on a worthwhile basis.

The technical background for this whole helium development has been provided by a highly specialized staff of men paid from the "helium investigations" appropriation. At the time the Bureau of Mines took over this work in Amarillo, in 1925, the average net operating outlay was $35 per thousand feet of helium produced. Now it is costing less than $9 per thousand.

In less than five years, the Amarillo plant has produced nearly one-half of all the noninflammable gas ever recovered in the world, or around 55,000,000 feet. This has accomplished a saving of at least $1,375,000, besides $150,000 which the Government received from the sale of natural gas from which the helium was extracted. The Government's investment is approximately $2,000,000. Thus the saving is nearly 70 per cent of the investment—at a time when the properties have just begun to really produce. To date, the depletion of the Government's gas reserves is only about 2 per cent, insuring a reserve for many years to come.

Colonel Burrell Reviews Natural Gas Progress

Progress of the natural gas industry, the decline of which was freely predicted a quarter of a century ago, is described in "Industrial & Engineering Chemistry" publication of the American Chemical Society, by George A. Burrell of the Burrell-Mase Engineering Co., Pittsburgh, Pa.

"Twenty-five years ago about 500,000,000,000 feet of natural gas were consumed per year," says Mr. Burrell. "This compares with a peak production in 1930 of almost 2,000,000,000,000 feet, and a value of $415,000,000. Manufactured gas for that same year amounted to about 400,000,000,000 feet at a value of $450,000,000. Half of the natural gas is used at the present time for domestic and industrial use, and the other half in the oil fields and for making carbon black.

"Natural gas customers now number about 7,000,000. Ohio, New York and Pennsylvania, in the order named, are the largest users of domestic and commercial gas aside from oil field and carbon black uses. Texas produces the most gas, and the largest reserve in that state, the Armarillo, will last for 60 years, it is estimated, at its present rate of production.

"Of particular interest has been the discovery, in recent years, of natural gas from deep strata in northern Pennsylvania and New York fields. The known reserve per acre in the Tioga Field is something of the order of 2,000,000,000 to 5,000,000,000 feet, and that in the Potter Field probably somewhat more. Rock pressures are as high as 2,250 pounds per square inch, and wells are 4,000 to 5,000 feet deep.

"Thus it is seen that the natural gas industry is not yet a declining one, although this prediction was freely made 25 years ago.

"Wells now can be drilled to a depth of 7,000 feet or more, and the gas is transported a distance of 1,000 miles. In 1930 there were constructed 21,000 miles of trunk lines at a cost of $450,000,000. The total trunk line mileage is 60,000, and there are 600,000 horsepower of gas engines of 300 horsepower and over, for compressing the gas in these lines. There are now 56,000 gas wells in the United States.

"The amount of natural gas consumed per year is equal in heating value to about 70,000,000 tons of bituminous coal. The peak production of coal was about 500,000,000 tons per year. Natural gas to the extent of 196,000,000 feet was used in 1931 to make 281,000,000 pounds of carbon black. Of this, about 100,000,000 pounds were exported. Its main use is for auto tire manufacture, although considerable quantities are utilized in pigments, inks, paints and the like.

"About 1,500,000,000 gallons of natural gasoline are extracted from 1,500,000,000,000 feet of gas each year. This compares with almost no natural gasoline 25 years ago.

"Of the total amount of energy expended in the United States in 1929, aside from man power, bituminous coal furnished 50 per cent, petroleum 21 per cent, natural gas 7 per cent, and water power, anthracite, wood, and other sources, the remainder.

"The amount of gas produced at refineries in 1929 was 520,000,000,000 feet, of which 270,000,000,000 feet came from cracking stills and 250,000,000,000 from straightrun refining stills. This is greater than the amount of manufactured gas in the United States—that is, gas manufactured from coal and oil in gas plants for domestic and industrial purposes."

LOUISIANA RATE CASE

NEW ORLEANS, La., Jan. 27.—Citation of the Louisiana Public Service Commission to show cause why its order compelling the Peoples Gas & Fuel Co. to reduce natural gas rates and charges in Choudrant, Gibsland, Simsboro, Farmerville and Downsville, La., should not be temporarily enjoined has been effected by the Federal District Court here which issued a restraining order halting the January 2 instructions of the commission to the company. The case will be heard January 29 by a special three-judge tribunal here.

The Louisiana Public Service Commission on January 2 ordered the distributing company to reduce its rates and its minimum service charges. The company contends such a reduction is not warranted, and would amount to confiscation. The Peoples Gas & Fuel Co. is owned by the Northwest Louisiana Gas Co., Inc., which operates as the transporting agency.

BIG WELL IN HEBRON

BRADFORD, Pa., Jan. 27.—Hungiville Oil & Gas Co.'s third big producer in Hebron Township, Potter County, blew in with an output of 15,000,000 feet of gas. This well, located on the Sturdevant farm, showed more than 100,000 feet late last week with the drill barely touching the Oriskany sand.

UTILITY AT AUCTION

Although the city council of Guthrie, Okla., has voted in favor of a bond issue for purchase or construction of a municipal natural gas plant and distribution system, it is not expected the city will submit a bid for the local property of the insolvent Western Service Corp. when it is offered March 30 at public auction. Definite action will be taken by the council after receipt of a survey report to show the cost of the proposed utility.

CARBON BLACK PROJECT

CHATHAM, Ontario, Jan. 27.—C. Ross Ecklin, of Craigmyle, Alberta, has secured an Alberta government license permitting him to manufacture carbon black from a gas lease in Section 36-32-17w4, near Delia, Alberta. The permit is subject to the payment of 5 per cent royalty on the sale price of the manufactured product until December 31, 1934, 10 per cent for the ensuing five years and 12½ per cent thereafter. Some years ago shallow gas production was encountered in the Delia area in drilling for water, and at the time the Prairie Natural Gas Co. planned to utilize this for the manufacture of carbon black. Owing to financial conditions, however, the project was dropped at the time.

ALBERTA LEASE REGULATION

CHATHAM, Ontario, Jan. 27.—Details of the Alberta order-in-council recently issued with respect to the area of oil and gas leases in that province show that the maximum area for a lease remains unchanged. This is 1,920 acres for an ordinary lease, and 640 acres for a lease on school lands. Numbers of small areas, sometimes only 40 acres, have been held for speculative purposes. Under the amended regulation the department of lands and mines will be enabled to deal more satisfactorily with such leases should they revert to the government for nonpayment of taxes or other charges.

Oklahoma-Kansas and Eastern Monthly Pipe Line Report

OKLAHOMA-KANSAS PIPE LINE STATEMENT FOR DECEMBER

Runs

Company—	Month (bbls.)	Dly. av. (bbls.)
Gulf P. L. Co.	1,194,433	38,530
Texas P. L. Co.	643,051	20,744
Empire P. L. Co.	1,969,879	63,545
Cosden P. L. Co.	745,430	24,046
Stanolind P. L. Co.	2,487,750	80,250
Oklahoma P. L. Co.	2,637,699	85,087
Other lines	8,612,637	277,827
Total December	18,290,879	590,029
Total November	17,963,430	598,781
Difference	327,449	8,752

Shipments

Gulf P. L. Co.	1,183,508	38,178
Texas P. L. Co.	756,650	24,408
Empire P. L. Co.	1,835,052	59,195
Cosden P. L. Co.	658,576	21,244
Stanolind P. L. Co.	3,808,660	122,860
Oklahoma P. L. Co.	2,545,131	82,101
Other lines	8,122,000	262,000
Total December	18,909,577	609,986
Total November	18,125,280	604,176
Difference	684,297	5,810

Stocks

Sinclair Prairie Oil Mktg. Co.*..	31,100,000
Gulf P. L. and Gypsy Oil Co. ..	7,482,918
Texas Co.	5,346,814
Empire P. L. Co.	5,643,412
Mid-Continent Pet. Corp.	2,513,133
Stanolind Crude Oil Pur. Co.	13,600,000
Oklahoma Pipe Line Co.	1,165,017
Carter Oil Co.	2,599,207
Other lines	29,000,000
Total December	98,450,501
Total November	96,947,510
Difference	1,503,091

*Estimated. Stanolind Pipe Line Co. shipments include Texas crude oil.

EASTERN PIPE LINE REPORT FOR MONTH OF DECEMBER

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky, Illinois, Indiana and Michigan for November and December:

	Nov., '33	Dec., '33
Nat. Transit	266,115.78	248,595.52
S.W. Pa. P. L.	72,607.55	67,264.40
Eureka P. L.	267,637.95	259,595.97
Buckeye P. L. (Macksburg)	238,896.28	227,615.69
Buckeye P. L. (Cleveland)	8,699.28	8,841.81
Buckeye P. L. (Lima, etc.)	57,434.15	56,547.64
Stoll Oil Ref.	24,657.00	22,757.64
Bradford Trans.	417,097.11	414,710.68
N. Y. Transit	33,476.57	33,470.46
Tide Water P. L.	21,119.13	21,592.66
Pure Oil	724,732.74	705,520.27
Daugherty Ref.	482.00	586.00
Valvoline Pipe	77,772.80	75,510.20
Other companies	351,006.14	268,358.97
Total	2,561,734.48	2,410,967.28
Daily average	85,391.15	78,257.01

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for November and December:

	Nov., '33	Dec., '33
Nat. Transit	596,945.05	494,085.74
S.W. Pa. P. L.	499,347.82	453,437.68
Eureka P. L.	258,974.04	174,489.25
Buckeye P. L. (Macksburg)	247,907.03	254,820.05
Buckeye P. L. (Cleveland)	1,463.28	1,212.68
Buckeye P. L. (Lima, etc.)	1,464,523.24	1,149,143.72
Indiana P. L.	823,796.53	806,448.92
Bradford Trans.	451,406.11	357,618.31
Southern P. L.	24,398.66	24,723.19
Tuscarora Dev.	208,318.49	349,483.55
N. Y. Transit	197,117.52	119,748.15
Northern P. L.	80,850.85	79,964.94
Tide Water P. L.	402,663.97	311,792.83
Pure Oil	642,878.26	638,573.54
Valvoline P. L.	22,437.08	45,673.75
Other companies	369,373.98	194,173.01
Total	6,223,001.91	5,545,389.31
Daily average	207,433.39	178,883.53

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of November and December:

	Nov., '33	Dec., '33
Nat. Transit	398,812.97	364,935.28
S.W. Pa. P. L.	330,203.09	292,076.27
Eureka P. L.	803,693.96	893,113.48
Buckeye P. L. (Macksburg)	281,668.95	260,524.46
Buckeye P. L. (Cleveland)	42,945.95	41,820.28
Buckeye P. L. (Lima, etc.)	2,430,204.72	2,611,210.72
Indiana P. L.	457,590.07	464,104.05
Bradford Trans.	214,019.22	273,764.04
Southern P. L.	169,245.09	149,822.09
Tuscarora Dev.	5,747.77	5,845.19
N. Y. Transit	98,657.05	82,589.79
Northern P. L.	167,100.20	168,295.64
Tide Water P. L.	715,620.85	772,338.22
Pure Oil	837,355.80	747,934.27
Valvoline	137,198.47	127,177.39
Other companies	304,890.65	105,856.17
Total	7,134,944.81	7,466,397.34
Increase	282,135.63	331,456.43

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of November and December, showing gross stocks of the above fields:

	Nov., '33	Dec., '33
Pennsylvania	2,423,948.92	2,505,906.61
Lima	399,525.29	403,601.31
Kentucky	.....	791.42
Mid-Continent	3,352,178.39	3,839,358.55
Illinois	7,057.07	585,400.46
Michigan	637,355.80	747,934.27
Total	6,920,065.87	8,081,992.62

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1930	1931	1932	1932
January	75,907	53,939	53,501	64,493
February	79,256	55,163	55,498	58,140
March	76,688	54,331	57,199	59,417
April	84,536	54,914	57,348	61,812
May	70,546	53,344	59,105	65,755
June	75,430	54,110	64,371	67,370
July	68,921	50,723	63,402	68,100
August	54,291	51,502	67,676	77,527
September	56,595	61,345	65,423	83,193
October	58,179	65,595	65,960	84,686
November	52,332	59,819	60,602	85,391
December	53,999	61,835	57,401	78,257

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1930	1931	1932	1932
January	217,623	175,269	186,551	198,956
February	224,355	183,494	169,856	187,928
March	228,846	189,508	188,793	183,632
April	241,845	191,450	202,036	181,940
May	248,383	199,247	201,401	199,671
June	234,401	221,155	201,632	211,980
July	207,094	211,632	202,859	213,417
August	205,506	224,166	187,839	211,128
September	193,999	217,537	170,524	212,913
October	157,675	210,831	188,504	214,362
November	146,638	196,425	189,626	207,433
December	143,001	176,241	186,135	178,884

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1931	1932	1933
January	11,831,092	9,023,914	7,607,270
February	11,506,489	8,974,350	7,302,746
March	11,012,162	8,802,192	7,279,843
April	11,044,481	8,908,461	7,212,548
May	10,728,239	8,835,726	7,016,521
June	9,903,349	8,732,724	6,766,038
July	9,569,849	8,176,956	6,713,942
August	9,192,457	8,128,576	6,617,276
September	8,492,431	7,895,421	6,601,134
October	8,417,694	7,421,630	6,852,809
November	8,830,386	7,116,200	7,134,944
December	9,119,032	7,139,420	7,466,397

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, December 31	564,851.62
Runs from wells	409,147.30
Other receipts	23,297.24
Regular deliveries	251,099.91
Other deliveries	105,866.71

The amount of Illinois oil run by the Tide Water Pipe Co. in December was 21,-592.66 bbls. Deliveries were 23,137.95 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1933—	Runs	Deliveries
December	409,147.30	251,099.91
1932—		
January	500,177.12	246,634.10
February	482,561.50	186,010.30
March	565,538.70	270,617.75
April	461,920.92	285,817.98
May	521,884.64	279,859.88
June	501,878.26	263,703.70
July	466,635.89	284,537.18
August	476,095.53	307,325.89
September	436,529.00	329,994.39
October	332,680.67	352,620.34
November	346,880.27	338,351.23
December	336,072.57	317,749.63
1933—		
January	344,054.84	314,108.93
February	306,520.61	294,340.35
March	385,665.57	314,514.48
April	311,146.72	356,455.50
May	361,901.38	334,420.38
June	420,565.87	350,984.36
July	455,997.46	428,608.53
August	479,798.34	431,176.90
September	457,408.62	376,502.96
October	458,311.88	299,714.00
November	444,598.15	317,891.87

Tide Water Pipe Co., Ltd., also delivered in December 57,217.68 bbls. Oklahoma oil.

Average Daily Imports of Crude and Refined Oil at Principal United States Ports

Average barrels per day in 1933—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Total all ports
January	7,644	4,355	64,194	25,710	6,613	108,516	.....	.....	.....	.....	548	109,064
February	7,682	4,789	120,490	12,610	10,822	156,393	.....	.....	.....	.....	2,357	158,750
March	7,710	4,390	101,258	36,292	16,000	165,290	.....	.....	.....	.....	.....	165,290
April	10,000	6,700	73,433	32,267	9,967	132,367	.....	.....	.....	.....	.....	132,367
May	4,258	2,194	62,484	32,548	3,355	94,839	.....	.....	.....	.....	4,355	99,194
June	4,833	.....	46,967	29,967	5,233	87,000	.....	.....	.....	.....	.....	87,000
July	10,645	2,452	91,258	33,161	2,968	140,484	.....	.....	.....	.....	6,194	146,678
August	12,774	2,452	112,193	33,484	4,742	168,645	.....	.....	.....	.....	2,161	170,806
September	7,667	.....	51,733	27,733	3,267	90,400	.....	.....	.....	.....	.....	90,400
October	7,612	1,516	60,581	23,967	.....	93,677	.....	.....	.....	.....	1,452	95,129
November	11,533	1,900	71,700	14,534	2,600	102,267	.....	.....	.....	.....	1,966	104,233
December	8,871	.....	77,258	29,161	7,677	122,968	.....	.....	.....	.....	6,419	129,387

Average Daily Receipts of California Crude and Refined Oil at Atlantic and Gulf Ports

Average barrels per day in 1933—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Total all ports
January	968	1,484	20,903	3,742	18,064	45,161	.....	.....	.....	.....	.....	45,161
February	9,106	1,643	14,250	10,965	11,500	47,464	.....	.....	.....	.....	2,643	50,107
March	5,065	.....	16,516	9,968	13,935	45,484	.....	.....	.....	.....	7,484	52,968
April	6,000	.....	14,500	7,733	4,934	33,167	.....	.....	.....	.....	4,900	38,067
May	4,194	.....	15,255	14,293	5,871	39,613	.....	.....	.....	.....	4,452	44,065
June	1,267	.....	5,300	11,767	7,667	26,000	.....	.....	.....	.....	4,938	30,933
July	3,773	.....	17,323	24,097	15,194	60,387	.....	.....	.....	.....	.....	60,387
August	2,484	1,742	12,065	15,032	7,129	38,452	.....	.....	.....	.....	.....	38,452
September	3,433	1,600	14,233	11,633	10,400	41,300	.....	.....	.....	.....	1,300	42,600
October	1,806	3,387	26,516	7,484	22,129	61,322	.....	.....	.....	.....	.....	61,322
November	11,666	8,067	33,830	10,803	23,067	87,433	.....	.....	.....	.....	.....	87,433
December	3,032	10,419	41,194	7,419	25,710	87,774	.....	.....	.....	.....	5,032	92,806

Gross Production of Crude Oil in the United States for 12 Months

(In barrels of 42 gallons)

1933—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
January:	Month	14,460,282	12,575,832	26,115,932	2,871,282	993,457	2,021,117	2,241,610	3,112,000	64,391,512
	Daily average	466,461	405,672	842,449	92,622	32,047	65,197	72,310	100,387	2,077,145
February:	Month	13,107,043	12,692,132	25,092,383	2,801,512	880,208	1,793,443	2,096,612	2,747,000	61,110,333
	Daily average	468,109	449,719	896,156	100,054	31,436	64,052	74,879	98,011	2,182,512
March:	Month	13,414,980	15,479,726	34,242,444	3,604,539	943,702	2,070,695	2,371,469	3,118,000	75,245,555
	Daily average	432,741	499,556	1,104,595	116,276	30,442	66,797	76,499	100,581	2,427,276
April:	Month	14,262,943	11,746,170	27,306,582	3,492,990	909,120	2,156,736	2,209,470	3,017,000	66,101,011
	Daily average	475,431	391,539	910,219	116,433	30,304	71,893	73,649	100,567	2,170,034
May:	Month	14,817,633	13,552,797	49,151,776	3,277,103	928,667	2,116,296	2,294,558	3,177,000	89,315,830
	Daily average	477,988	437,187	1,585,141	105,713	29,957	68,268	74,018	102,161	2,881,156
June:	Month	14,344,654	14,360,910	39,907,737	3,210,150	901,770	2,009,831	2,239,650	3,191,000	80,165,702
	Daily average	478,155	478,697	1,330,258	107,035	30,059	66,994	74,655	106,367	2,672,190
July:	Month	15,140,828	18,406,374	39,031,468	4,068,130	946,926	2,143,314	2,421,720	3,474,000	85,632,760
	Daily average	488,414	593,754	1,259,080	131,230	30,546	69,139	78,120	112,065	2,762,347
August:	Month	15,536,841	18,808,382	37,683,671	3,908,294	971,292	2,281,151	2,436,883	3,850,000	85,476,514
	Daily average	501,188	606,722	1,215,602	126,074	31,332	73,582	78,577	124,194	2,757,307
September:	Month	14,673,846	16,603,890	33,511,172	3,729,000	953,580	2,247,451	2,427,980	3,890,000	78,036,899
	Daily average	489,129	553,463	1,117,039	124,300	31,786	74,915	80,932	129,667	2,601,230
October:	Month	14,665,011	15,021,932	32,914,578	3,287,643	1,017,395	2,316,000	2,500,615	4,090,000	75,822,764
	Daily average	473,065	484,872	1,061,761	106,053	32,835	74,710	80,665	131,936	.....
November:	Month	12,933,559	14,364,030	27,986,117	3,590,400	986,910	2,235,810	2,434,920	3,827,000	69,367,746
	Daily average	464,452	478,801	932,871	119,980	32,897	74,526	81,164	127,567	2,312,258
December:	Month	14,767,800	14,835,174	28,864,592	3,455,725	1,016,118	2,237,811	2,494,477	3,935,000	71,606,697
	Daily average	476,381	478,554	931,116	111,475	32,778	72,189	80,467	126,799	2,309,893
	Total 12 months	173,125,420	178,356,449	401,808,452	41,305,763	11,449,635	25,629,655	28,169,944	41,428,000	901,273,323
	Daily average	474,316	488,648	1,100,845	113,166	31,369	70,218	77,169	113,200	2,469,242

MARKET RECORD OF OIL SECURITIES

Active Oil Stocks Listed on New York Stock Exchange

Compiled by Carl H. Pforzheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

1934 High	1934 Low	Week ended Jan. 27 Sales	Week ended Jan. 27 High	Week ended Jan. 27 Low	Week ended Jan. 27 Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	1933 High	1933 Low	1932 High	1932 Low	1931 High	1931 Low
49	41½	13,000	49	45	47¾	Amerada Corp.	774,875	N.P.	50cQ	1-31-34	47⅝	18½	22¾	12	23	11¼
33⅜	28¼	53,800	33⅜	31⅝	32½	Atlantic Refining	2,673,834	$25	25cQ	12-15-33	32½	12⅜	21⅞	8⅝	23⅝	8⅝
10	7¾	46,100	10	9¼	9⅜	Barnsdall Corp.	2,186,385	$5	....	5-11-31	11	3	7	3⅜	14½	4
15¼	11⅛	55,600	15¼	14⅛	14¼	Columbia Gas & Elec.	11,610,036	N.P.	12½cQ†	2-15-34	28⅛	9	21	4¼	45⅝	11⅝
12¼	9¾	96,400	12¼	11⅜	11⅝	Consolidated Oil Corp.	14,218,835	N.P.	....	.....	15¾	5	9	4	15⅞	4⅛
19½	16½	56,900	19½	18½	19⅛	Continental Oil of Delaware	4,738,593	$5	....	.....	19⅝	4⅞	9⅜	3⅝	12	5
20⅛	15¼	13,200	20⅛	18½	18¾	General Asphalt	387,149	$10	....	6-15-32	27	4⅝	15½	4¾	47	9⅝
5⅜	3½	9,400	5⅜	4¾	4⅞	Houston Oil (new)	1,098,618	$25	....	10-17-30	7⅜	1⅞	5⅜	1⅛	14⅛	3
2½	1¼	2,700	2½	2	2¼	Louisiana Oil Refining	1,302,158	N.P.	....	.....	4	⅝	2¼	½	4½	1
14⅛	11⅝	14,100	14⅛	13	13¼	Mid-Continent Petroleum	1,857,912	N.P.	....	2-16-31	16	3¾	8⅞	3¾	16¾	5
16½	11½	4,400	16½	15¾	15¾	National Supply of Delaware	382,591	$25	....	5-15-31	28⅝	4	13	3½	70¼	5
15¾	12⅝	49,700	15¾	14½	14½	Ohio Oil Co.	6,563,107	N.P.	....	12-15-32	17⅝	4¾	11	5	19½	5⅛
8	6⅞	1,000	8	7⅝	8	Pacific Western Oil	1,000,000	N.P.	25c‡	10-25-33	9½	3	8	3	15	2⅞
2⅜	1¼	1,200	2⅜	1¾	2	Panhandle P. & R.	198,770	N.P.	....	.....	4¼	⅜	1¼	¼	4¼	⅝
17⅝	15⅛	68,000	17⅝	16⅝	17½	Phillips Petroleum	4,155,113	N.P.	25c	2-15-34	18¾	4¾	8⅛	2	16⅝	4
16⅜	12⅝	69,100	16⅜	15¼	15⅞	Plymouth Oil Co.	990,261	$5	25cQ	12-21-33	17⅝	6¾	12½	6	19	6
13⅜	10⅛	52,100	13⅜	12¼	13	Pure Oil	3,038,370	N.P.	....	9- 1-30	15⅜	2½	6½	2⅞	11⅞	3¼
38¼	36	1,100	38¼	37¼	38¼	Royal Dutch N. Y. shares	432,224	$14	$1.07½	8-14-33	39¾	17⅝	23¾	12¼	42⅝	13
34⅜	25⅜	21,000	34⅜	31⅜	33	Seaboard Oil of Delaware	1,204,460	N.P.	15cQ§	12-15-33	43⅜	15	20⅜	6⅝	20¾	5½
11½	7⅞	103,100	11½	9¼	11⅜	Shell Union Oil	13,070,625	N.P.	....	6-30-30	11⅝	4	8¾	2½	10¼	2½
89	58	5,700	89	69⅜	81	Shell Union Oil pfd.	400,000	$100	....	7- 1-31	61	28½	65¼	18	78	15
10¾	9	4,300	10¾	10	10⅜	Simms Petroleum	461,000	$10	25c	1-17-34	12¾	4⅞	7½	3¼	11	3½
9¼	7⅞	4,900	9¼	9	9	Skelly Oil	1,008,514	$25	....	12-15-30	9⅞	3	5¾	2½	12⅞	2
18	15⅛	157,600	18	16⅝	17¾	Socony-Vacuum	31,019,694	$25	25c	12-15-33	17	6	12¼	5¼	21	8⅜
42⅜	37½	55,400	42⅜	41	41½	Standard Oil of California	13,102,900	N.P.	25c	12-15-33	45	19½	31⅞	15⅛	51¾	23⅛
38	36	300	37½	36⅝	37¼	Standard Oil of Kansas	200,000	$10	50cQ	4-30-34	39⅞	12¾	16½	7	19	7¾
47¾	44¼	63,300	47¾	46¼	46⅞	Standard Oil of New Jersey	25,740,965	$25	50cSA	12-15-33	47½	22¾	37⅜	19⅞	52½	26
58	51½	4,500	58	56	58	Sun Oil	1,591,110	N.P.	25cQ	3-15-34	59	35	39⅞	24⅜	45¼	26¾
28	23⅛	41,700	28	26¾	27¼	Texas Corp.	9,486,417	$25	25cQ	1- 1-34	30⅛	10¾	18¼	9¼	36¼	9⅞
4⅜	3⅛	71,900	4⅜	3⅞	4⅛	Texas Pacific Coal & Oil	880,703	$10	....	12-31-29	6½	1⅜	4	1½	6½	1⅞
11	8½	61,100	11	10⅛	10¾	Tide Water Associated	5,613,800	N.P.	....	2-16-31	11¾	3⅛	5⅝	2	9	2⅛
72	64½	1,400	72	69⅛	72	Tide Water Associated pfd.	666,524	$100	$1.50Q	12-23-33	65¼	23½	60	20	68	20½
20⅜	18¼	16,700	20⅜	19⅛	19¼	Union Oil of California	4,386,070	$25	25cQ	2-10-34	23⅜	8½	15⅜	8	26⅝	11
18¼	15⅝	1,800	18¼	17⅜	17¾	Union Tank Car	1,200,000	N.P.	30cQ	12- 1-33	22¾	10½	19¼	11¾	25½	16
5	3⅝	5,600	5	4¾	5	Wilcox Oil & Gas	424,839	$5	....	5-10-28	5½	2	8¾	2¾	9⅝	2¾

*Ex-dividend. †Payable in 5 per cent convertible preferred stock. ‡Initial dividend. §Plus extras.

Active Oil Stocks Listed on New York Curb

Compiled by Carl H. Pforzheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

1934 High	1934 Low	Week ended Jan. 27 Sales	Week ended Jan. 27 High	Week ended Jan. 27 Low	Week ended Jan. 27 Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	1933 High	1933 Low	1932 High	1932 Low	1931 High	1931 Low
35	32	450	35	33	35	Buckeye Pipe Line Co.	200,000	$50	75cQ	3-15-34	39¾	25	35	17½	56	30
4	3	5,300	4	3½	3½	Carib Syndicate	579,000	25c	....	.....	7¾	¼	¾	¼	2⅜	¼
125	118½	50	124½	124½	124½	Chesebrough Mfg. Co.	120,000	$25	$1Q†	12-30-33	129	71	90	53	129½	75
3½	1⅝	46,800	3¼	3	3⅛	Cities Service	37,804,394	N.P.	....	6- 1-32	6¼	1½	6⅞	1¼	20¾	5
2½	1⅛	1,800	2¼	1¾	2	Colon Oil	2,200,000	N.P.	....	.....	4	¼	1¼	¼	3⅛	¼
3⅞	1⅝	1,600	3⅜	2¾	2¾	Cosden Oil	399,687	$1	....	.....	3⅞	1⅜	2⅞	¼	3¾	⅜
12½	9⅝	66,100	12½	11⅝	12⅜	Creole Petroleum	6,974,356	$5	....	.....	12	4¾	3⅛	1¾	3⅞	1⅝
7½	4¾	600	7½	6⅝	6⅝	Darby Petroleum	509,696	$5	25c	2-15-34	8	2⅛	7⅛	1⅝	2½	1⅝
2	1⅝	1,300	2	1⅞	2	Derby Oil & Refining	263,162	N.P.	....	.....	2¾	⅞	3	1	6	1½
34¾	33	150	34¾	34¾	34¾	Eureka Pipe Line	50,000	$100	$1Q	2- 1-34	41¾	20	35	18	36	19
76¾	58½	17,200	76¾	71⅝	74	Gulf Oil Corp.	4,538,101	$25	....	10- 1-31	62	24	44¾	23	75½	25⅜
40½	33¼	29,000	40½	38½	39⅞	Humble Oil & Refining (new)	8,923,935	N.P.	50cQ	1- 1-34	105½	40	55	35⅝	72	44½
14¼	12⅝	22,500	14	13⅛	13¾	Imperial Oil of Canada	26,742,792	N.P.	12½c‡	12- 1-33	15⅞	6½	10⅞	6¼	18¼	7⅜
5⅝	4⅝	300	5⅝	5⅝	5⅝	Indiana Pipe Line	300,000	$10	15cSA†	11-15-33	8	3⅛	7½	2¾	21⅛	5½
22¾	19⅜	33,800	22¾	21	22¾	International Petroleum	14,247,088	N.P.	28cQ‡	12-15-33	23½	8⅞	12¼	8	15½	7⅜
3⅛	2⅛	4,100	2¾	2½	2⅝	Louisiana Land & Exp.	3,000,000	N.P.	....	.....	2¼	⅛	2½	½	2	½
5⅛	4¾	100	5⅛	5⅛	5⅛	Lion Oil Refining	270,000	N.P.	....	10-27-30	9½	1¼	3½	⅞	6¾	1½
7	5¾	1,000	7	6⅝	6¾	Lone Star Gas	5,382,723	N.P.	16cQ§	12-30-33	11⅞	4¾	11	3⅜	29	5½
4½	4	2,600	4½	4¼	4¼	Mountain Producers	1,682,182	$10	15cQ	1- 2-34	6½	2½	4¾	2⅛	5⅞	2
15½	14	500	14¾	14⅛	14½	National Fuel Gas	3,810,183	N.P.	25cQ	1-15-34	20	10	14⅝	8	26½	9¾
8½	8	100	8	8	8	National Transit	509,000	$12.50	40cSA	12-15-33	10	5½	10½	6	17½	5
2⅛	1¾	1,000	2⅛	2	2⅛	New Bradford Oil	1,445,202	$5	10c	3-15-34	2⅛	½	⅞	¼	1½	½
1⅛	1	700	1⅛	1⅛	1⅛	New Mexico and Arizona	1,000,000	$1	....	.....	1⅞	½	1¼	⅜	3	¾
3½	3	50	3½	3½	3½	New York Transit	100,000	$5	15cSA	10-14-33	4⅞	3	9¾	7½	14½	5⅞
5⅜	4⅝	100	5	5	5	Northern Pipe Line	120,000	$10	25cSA	1- 2-34	6⅛	4¼	5½	3⅛	35½	20
1¼	⅞	9,200	1¼	1⅛	1¼	Pantepec Oil	1,608,700	N.P.	....	.....	3¾	⅛	⅝	1/16	2	⅝
2	1¼	1,400	2	1¾	2	Ryan Consolidated	296,931	N.P.	....	.....	4¼	⅝	2⅛	⅝	3	¾
6¾	5¾	1,700	6¾	6⅛	6⅛	Salt Creek Producers	1,496,859	$10	20cQ	2- 1-34	9¼	3½	5½	2⅞	7⅝	2¾
19¾	17½	2,800	20¾	19⅛	20¾	South Penn Oil	1,200,000	$25	25cQ	12-30-33	22⅛	11	16½	9⅝	23⅞	9¼
4⅞	4	No sales	..	..	..	Southern Pipe Line	100,000	$10	10cSA	9- 1-33	6	2⅛	10	3¾	17	7
..	..	No sales	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	$1Q	12-27-33	43	24½	37	27	42½	25
32¾	31½	35,100	32¾	31⅞	32¼	Standard Oil of Indiana	15,941,894	$25	25cQ	12-15-33	34	17	25⅛	13⅛	38½	13½
17½	14⅝	7,100	17½	16½	16⅞	Standard Oil of Kentucky	2,606,983	$10	25cQ	12-15-33	19¼	8⅜	15⅞	8⅞	23⅝	12⅛
16⅝	13½	400	16⅝	15½	16⅝	Standard Oil of Nebraska	190,822	$25	25cQ	12-20-33	20½	11	19	10¼	36½	16
27	23¼	2,900	27	25½	26⅜	Standard Oil of Ohio	753,740	$25	....	1- 3-33	41	15½	30⅛	15½	62⅛	23
1	1/16	2,300	1	1/16	1/16	Sunray Oil	1,162,840	$5	....	4-15-31	1½	¼	⅝	⅛	5¼	¼
8⅛	6¼	3,900	8⅛	7	8	Texon Oil & Land	936,028	N.P.	15c	1- 2-34	13¾	6¼	10½	4½	12⅞	2½

*Ex-dividend. †Plus extras. ‡Payable in Canadian funds. §Payable in preferred stock.

Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

Summary of Operations in All Fields for December, 1933

SUMMARY OF COMPLETED WORK

Field—	Comp.	Prod.	Dry	Gas
Eastern	178	777	12	14
Central Ohio	50	173	19	20
Lima	4	75	2	1
Indiana	23	272	8	7
Michigan	27	9,866	3	1
Kentucky	18	477	8	0
Illinois	1	0	1	0
Kansas	51	23,403	8	1
Oklahoma	141	37,797	37	9
North Texas	118	6,374	58	1
East Texas	311	18,892	10	0
West Texas	18	7,718	2	0
Texas Panhandle	23	7,262	1	5
Texas Gulf	116	80,038	29	4
Southwest Texas	92	18,485	43	7
North Louisiana	33	2,613	12	3
Arkansas	3	82	1	0
Mississippi	2	0	1	1
Alabama	0	0	0	0
East Texas gas area	3	40	1	0
Louisiana Gulf	20	5,013	9	1
Montana	8	215	2	2
Utah	0	0	0	0
Wyoming	5	115	1	2
Colorado	2	0	1	1
New Mexico	3	10	1	1
Total December	1,250	219,697	270	81
Total November	1,335	280,440	268	107
Difference	85	60,743	2	26

SUMMARY OF WORK UNDER WAY

Field—	Rigs	Drlg.	Ttl.
Eastern	71	182	253
Central Ohio	12	108	120
Lima	3	30	33
Indiana	2	40	42
Michigan	111	119	230
Kentucky	1	60	61
Illinois	2	10	12
Kansas	32	131	163
Oklahoma	81	380	461
North Texas	42	162	204
E. Cent. and East Texas	64	264	328
West Texas	35	102	137
Louisiana Gulf	23	76	99
Montana	5	53	58
Utah	1	17	18
Wyoming	7	62	69
Colorado	5	52	57
Texas Panhandle	18	62	80
Gulf Coast	55	180	235
Southwest Texas	30	113	143
East Texas gas area	4	12	16
North Louisiana	68	103	171
Arkansas	8	38	46
Mississippi	5	16	21
Alabama	0	3	3
New Mexico	2	55	57
Total December	687	2,430	3,117
Total November	653	2,374	3,027
Difference	34	56	90

Note—In the following report the Section, Township and Range are given first; then the farm, the owner, the serial number of the well and the initial production of the well. In lines where the Section, Township and Range are missing the wells are located in the Sections, Townships and Ranges which appear next above in the report.

Oklahoma Fields

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Kay	1	125	0	0
Osage	16	6,057	1	0
Creek	31	2,195	6	4
Marshall	4	28	2	0
Carter	4	1,273	0	0
Jefferson	4	133	1	0
Logan	1	2,823	0	0
Noble	4	6,357	0	0
Stephens	8	77	4	0
Payne	1	0	1	0
Lincoln	1	785	0	0
Tulsa	4	700	2	0
Okmulgee	11	424	5	1
Wagoner	8	65	4	1
Muskogee	5	0	4	1
Pontotoc	5	335	2	1
Oklahoma	7	7,450	0	0
Pushmataha	1	0	1	0
Okfuskee	2	210	0	1
Seminole	17	6,435	4	0
Pottawatomie	6	2,325	0	0
Total December	141	37,797	37	9
Total November	133	23,506	32	11
Difference	8	14,291	5	2

Rigs and Wells Drilling

	Rigs	Drlg.	Ttl.
Alfalfa	0	1	1
Atoka	2	4	6
Beckham	0	4	4
Blaine	0	4	4
Caddo	0	1	1
Cleveland	1	0	1
Creek	12	45	57
Carter	6	11	17
Coal	1	1	2
Comanche	0	4	4
Cotton	1	1	2
Choctaw	0	2	2
Dewey	0	1	1
Grant	1	0	1
Garfield	0	2	2
Garvin	0	2	2
Grady	0	2	2
Greer	0	2	2
Hughes	2	18	20
Jefferson	2	8	10
Jackson	0	1	1
Kay	0	2	2
Kingfisher	0	2	2
Kiowa	0	4	4
Logan	1	10	11
Lincoln	0	15	15
Marshall	1	8	9
McIntosh	0	1	1
Murray	1	1	2
Muskogee	1	5	6
Noble	1	9	10
Oklahoma	14	28	42
Osage	3	36	39
Okmulgee	2	21	23
Okfuskee	3	9	12
Pawnee	0	1	1
Payne	0	3	3
Pontotoc	2	8	10
Pittsburg	2	5	7
Pottawatomie	12	31	43
Pushmataha	0	1	1
Seminole	3	29	32
Stephens	2	15	17
Tillman	1	0	1
Tulsa	4	6	10
Wagoner	0	12	12
Washita	0	4	4
Total December	81	380	461
Total November	99	372	471
Difference	18	8	10

WELLS COMPLETED

KAY COUNTY

30-25-1w Stone, Argo O. & G. 1-A 125

OSAGE COUNTY

21-24-7 SE, Continental Oil 2 288
25-23-8 SE, H. H. Markey 14 200
22-25-6 NW, Sinclair Prairie & Mead Oil 2 50
15-24-7 NW, Producers & Ref. 2 90
16-24-7 SE, Champlin Ref. Co. 2 230
16-24-7 NE, Kaskishke & Lewis Prod. 3 250
21-24-7 SE, Continental Oil 3 1440
21-24-7 SW, Lewis Prod. 2-B 2400
25-23-8 SE, H. H. Markey 14 217
30-22-9 NE, E. O. Platter 12 5
13-23-7 NE, Bay Oil 1 25
21-24-7 NE, Continental-Gypsy 2 392
27-21-9 SW, Gray & Tolson 3 20
11-24-6 NW, Phillips Pet. 1 ..... dry
22-25-6 NW, Sinclair Prairie 2 100
10-24-7 SW, Lewis Prod. 1 350

Wells completed 16
Production 6057
Dry 1

CREEK COUNTY

24-18- 8 Wilson, F. O. Akin 6 100
24-18- 8 Wilson, F. O. Akin 7 200
34-18- 8 Crabtree, Bay State Oil 2 175
34-18- 8 Tiger, Kilgore et al 2 185
34-18- 8 SE, Todd & Willoughby 2 140
22-18- 9 Posey, Wasson & McNamara .. gas
4-17-10 Unallotted, Curtis Oil 1 ..... gas
15-17-10 Crawford, A. B. Ice 1 ..... dry
36-17-11 Grayson, Sherry & Murta 4 .. 60
9-16-12 Muskogee, S. W. Anthony 6 .. gas
3-18- 8 Grayson, Wood Oil 2 35
34-18- 8 Tiger, Jones & Doss 3 200
34-18- 8 Tiger, F. L. Marrs 3 125
34-18- 8 Montgail, P. C. Perry 1 15
35-18- 8 Harry, Texas Co. 1 30
33-17- 7 Bruner, H. C. Fogle 10 5
12-17-10 Unallotted, Curtis Oil 1 ..... dry
34-18- 8 Wilson, F. O. Akin 8 200
34-18- 8 Tiger, Jones & Doss 4 200
34-18- 8 Tiger, Jones & Doss 5 250
35-18- 8 Harry, Texas Co. 3 30
3-18- 8 Prince, Johnson O. & R. 3 75
3-17- 8 Tiger, C. W. Titus 1 10
3-18- 8 Prince, E. L. Robinson 2 30
12-17-10 Harris, Whitten & Wilcox 3 .. dry
26-17-11 Webb, Whittington & Page 3 .. gas
35-16-11 Grayson, Klinginsmith 7 30
7-19-10 Holmes, Johnson O. & R. 2 .. dry
8-18- 7 Brewer, Comail Oil 4 100
2-17- 8 Taylor, Williams & Hammons 1 dry
22-17-11 Jack, W. E. Page 1-A ..... dry

Wells completed 31
Production 2195
Dry 6
Gas 4
Gas production 5,500,000

MARSHALL COUNTY

3-7s-6e McDuffee, J. Peacock 1 6
30-5s-6e Davidson, Harry Ables 9 22
10-7s-5e Howard, Autry et al 1-A .... dry
25-7s-5e Ayers, Newsome et al 1 ..... dry

Wells completed 4
Production 28
Dry 2

CARTER COUNTY

3-1s-3w Fee, Walter Neustadt 2 350
4-1s-3w Riddle, Carter Oil 1 200
3-1s-3w Briden, Carter Oil 1 395
25-1s-3w Curtis-Gorman, Samedan Oil 3 328

Wells completed 4
Production 1273

JEFFERSON COUNTY

3-7s-5w Seay, Farlyn Oil 14 30
3-7s-5w Seay, Southern Oil 10 78
10-7s-5w Seay, Bridwell Oil 1 ..... dry
3-7s-5w Seay, Farlyn Oil 15 25

Wells completed 4
Production 133
Dry 1

LOGAN COUNTY

27-17-4w Good, Gypsy Oil-Carter Oil 1.2833

NOBLE COUNTY

16-20-2w Boley, Stanolind-Amerada 250
20-20-2w Weber, Lucien Consol. 1 4528
20-20-2w Weber, Lucien Consol. 2 645
20-20-2w Schonwald, Minnehoma Oil 1.. 934

Wells completed 4
Production 6357

STEPHENS COUNTY

28-2s- 7w Bristow, George Pace et al 2 dry
13-1n- 6w Miller, Navajo Oil 1 ..... dry
4-3s- 5w Wilson, Owl Oil 16 7
4-1n- 6w Cunningham, Doyle Oil 1 ... dry
1-2s- 5w Cobb, Mudge Oil et al 11 ... dry
1-2s- 5w Cobb, Mudge Oil 12 10
1-2s-10w Whitehead, Shasta Oil 3 20
1-2s-10w Whitehead, Shasta Oil 15 ... 40

Wells completed 8
Production 77
Dry 4

PAYNE COUNTY

6-18-5 Bryant, Stanolind-Amerada 1 ... dry

LINCOLN COUNTY

11-14-3 Brill, Stanolind-Amerada 1 785

TULSA COUNTY

5-17-14 Perryman, H. W. Bowder et al 1 160
8-17-14 Hodge, Rachael Oil 1-A 540
17-19-14 McIntosh, Murray et al 2 .. dry
32-18-11 Shoals, Anbern et al 1 ..... dry

Wells completed 4
Production 700
Dry 2

OKMULGEE COUNTY

35-15-14 Jackson, R. C. Jones 1-A ..... dry
4-15-11 Fife, Iron Mt. Oil 5 100
4-15-11 Fife, Iron Mt. Oil 7 50
31-15-13 Perryman, D. M. Logan 4 .. gas
9-15-14 Ware, Carr, Peterson 7 12
15-15-13 Hawkins, Papoose & Steckel 2 dry
35-12-13 Carr, Rutz et al 1-A 12
13-16-11 Peters, Sheridan Oil 4 ..... dry
24-16-13 Tiger, Knowlton 3 ..... dry
22-13-14 Fox, Gled Oil 18 250
31-11-11 Grayson, Minnehoma 2 ..... dry

Wells completed 11
Production 424
Dry 5
Gas 1
Gas production 1,000,000

WAGONER COUNTY

15-18-15 Trotter, Edwards & Leidecker 2 35
23-18-15 Robin, Sands Pet. 4 15
24-18-15 Derrisaw, Helvie & Stout 5 ... dry
35-18-15 Lovett, Dunbar et al 2 ..... dry
11-17-15 T. Tiger, Greer et al 1 ..... dry
1-17-15 Vann, Scales & Boley 1-A .... dry
22-18-15 Grayson, Dunbar et al 2 ..... gas
36-18-15 Ballard, J. E. Martin 1 15

Wells completed 8
Production 65
Dry 4
Gas 1
Gas production 1,200,000

PAWNEE COUNTY

36-20-7 Walkup, Tuttle Oil 1 25

PONTOTOC COUNTY

25-5-4 Harker, Loke Oil Co. 3 220
25-5-4 Hickman, Denver P. & R. 3 .. 115
7-5-5 Vierson, et al 1 ..... dry
25-2-6 Craddock, W. A. Delaney 1 .... gas
7-5-5 Norman, Vierson et al 1 ..... dry

Wells completed 5
Production 335
Dry 2
Gas 1
Gas production 17,000,000

OKLAHOMA COUNTY

22-11-3w Davis, Harrell-Davis 1 (4 hrs.) 817
15-11-3w Shepard, Pierce et al 1 (8 hrs.) 2,143
19-14-3w Price, H. E. Rapp et al 1 ... 125
23-12-3w Highley, Frank Russell 1 250
22-11-3w Drew, Phillips Pet. 3 (5 hrs.).1000
22-11-3w Hardcastle, Phillips Pet. 2 (4 hrs.) 1250
22-11-3w Rodesney, Sentinel Oil 1 1865

Wells completed 7
Production 7450

PUSHMATAHA COUNTY

9-2-16 Wilkerson, Haley et al 1 ..... abd

OKFUSKEE COUNTY

14-10-11 Stephenson, Wells et al 2 210
36-10-11 Gregory, Texas Co. 2 ..... gas

Wells completed 2
Production 210
Gas 1
Gas production 22,000,000

SEMINOLE COUNTY

30- 8-8 Kiker, Lyon & Todd 1 300
31- 7-5 Wood, Superior Oil Co. .. .. dry
10- 7-8 Chapman, Manahan et al 3 728
10- 7-8 Jacobs, Sunray Oil 3 52
20- 7-8 Scroggins, Burke-Greis Oil 1-A. dry
30- 7-8 Fish, Jarvis & Holm 3 1111
26- 6-7 Landowners, Stanolind-Amerada 1 1312
20- 9-6 Campbell, Carter Oil 5 673
20- 7-8 Davis, Burke-Greis Oil 2 70
19-19-6 Chowning, Carter Oil 7 ..... dry
25- 6-6 Franks, Magnolia Pet. 2 139
9- 7-8 Bruner, Mid-Continent Pet. 3 .. 160
22- 7-8 Petete Kent & Preston 1 75
27- 6-5 Sanderson, Stewart et al 1 .... dry
22- 7-8 Davis, Bruin Oil 1 100
22- 7-8 Moore, Mainard et al 5 20
35-11-6 Canard, Carter Oil 2 1695

Wells completed 17
Production 6435
Dry 4

POTTAWATOMIE COUNTY

3-6-4 Mitchell, Amerada Pet. 2 167
33-7-4 Brown, Hall & Briscoe 2 514
31-7-5 Billington, Helmerich & Payne 1. 325
18-7-4 Kanster, Vivian Oil 1-A 72
33-7-4 Harrison, Amerada Pet. 3 150
32-7-4 Myers, Sinclair Prairie 2 1097

Wells completed 6
Production 2325

Kansas Fields

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Barton	1	334	0	0
Rice	8	5,813	0	0
Butler	1	60	0	0
Greenwood	9	290	4	0
Cowley	5	376	1	1
McPherson	14	7,734	0	0
Harvey	13	8,796	3	0
Total December	51	23,403	8	1
Total November	50	17,368	5	2
Difference	1	6,035	3	1

Rigs and Wells Drilling

County—	Rigs	Dig.	Ttl.
Greenwood	1	8	9
Butler	1	3	4
Sedgwick	3	11	14
Cowley	0	1	1
Harvey	4	14	18
McPherson	6	47	53
Rice and Ellsworth	11	12	23
Russell	2	5	7
Barton	0	6	6
Ellis	1	1	2
Rush	0	2	2
Edwards	0	1	1
Finney	0	1	1
Kingman	1	4	5
Phillips	0	1	1
Pratt	0	1	1
Rooks	0	1	1
Reno	1	9	10
Saline	0	1	1
Stafford	1	1	2
Trego	0	1	1
Total December	32	131	163
Total November	16	128	144
Difference	16	3	19

WELLS COMPLETED

BARTON COUNTY

16-20-11w Hauser, Stanolind 1 324

RICE COUNTY

5-20- 9w Profitt, Mid-Kansas 1 1090
18-20- 9w Malone, Gypsy Oil 1 1506
27-18-10w Herzog, Slick, Pryor & Lockhart 2 554
32-19- 9w Lisk, Gypsy Oil 1 247
21-20-10w West, Texas Co. 3 388
32-19- 9w Smith, Ramsey et al 3 608
31-19- 9w Santa Fe, E. F. Jones et al 1 775
31-19- 9w Lansing, Ramsey et al 1 .. 645

Completions 8
Production 5812

BUTLER COUNTY

17-29- 4 Graves, Hall et al 1-B 60

GREENWOOD COUNTY

24-25-11 Ballinger, Breska et al 1 .... dry
17-24-12 Thrall, Hubbard, Spencer et al 1 100
18-22-11 Clopton, Simmons et al 4 50
15-25-13 Kaub, Wolf Creek O. & G. 2. 80
27-22-11 Wick, Skelly Oil 25 40
24-25-13 Mills, Sheedy et al 6 20
10-23-13 Young, Theta Oil 9 ..... dry
32-23-11 Beall, Ward McGinnis 3 .... dry
10-22-13 Berridge, C. E. Johnson 1-A .. dry

Completions 9
Production 290
Dry 4

COWLEY COUNTY

15-32-4 State, Kansas-Oklahoma 1-A .. 306
34-32-4 Pettit, Blakesley & Wentz 1 .. dry
12-34-4 Brant, Roth & Faurot 6 70
9-32-5 Cavitt, Crow et al 1 ..... gas
9-32-5 Park, Crow et al 1-A ..... gas

Completions 5
Production 376
Dry 1
Gas 2
Gas production 270,000

McPHERSON COUNTY

6-20-1w Munn, Marileen O. & G. 4 135
3-19-3w Chindberg, Mid-Kansas 1 337
36-19-2w Koehn, Wakefield and Shell 2 225
24-19-2w Grattan, Youker et al 4 622
8-20-1w Vogts, Regina Oil 1 540
31-19-1w Legree, Lario and Shell 3 244
16-21-3w Spencer and Shell 1 25
33-21-3w Friesen, Mabee and Shell 2 ..1216
14-19-2w Myers, Shell et al 5 735
23-19-2w Russell, Helmerich & Payne 1 1216
24-19-2w Lovett, Gypsy Oil 3 657
36-19-2w Koehn, Wakefield and Shell 3 735
33-20-3w McCurdy, Sinclair Prairie 6.. 758
14-19-2w Myers B., Shell Pet. 5 889

Completions 14
Production 7734

HARVEY COUNTY

4-22-3w Schroeder, Sinclair Prairie 1.. 860
7-22-3w Froese, Empire O. & R. 1 847
8-22-3w Nikkell, Shell Pet. 2 469
18-22-3w Friesen, Gypsy Oil 1 ..... dry
19-22-3w Duerksen, Mid-Kansas 2 1304
30-22-3w Schmidt, Magnolia 3 840
17-22-3w Schmidt, Shell Pet. 4 1090
18-22-3w Neufeldt, Sinclair Prairie 4 .. 240
30-22-3w Klassen, Mid-Kansas 1 950
8-24-1e Gingras, Holbart and Shell 1. dry
11-22-1e Holbart Oil 1 ..... dry
19-22-3w Martens, Prod. & Ref. 7 909
19-22-3w Ediger, Sinclair Prairie 4 ...1296

Completions 13
Production 8796
Dry 3

East Central Texas Fields

Summary of Wells Completed

County—	Comp.	Prod.	Abd.	Gas
Angelina	1	0	1	0
Freestone	1	0	1	0
Gregg	155	9,200	2	0
Henderson	1	0	1	0
Hopkins	1	0	1	0
Rusk	118	7,498	3	0
Smith	17	1,003	0	0
Upshur	15	1,110	1	0
Van Zandt	2	81	0	0
Total December	311	18,892	10	0
Total November	329	21,041	9	1
Difference	18	2,149	1	1

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drlg.	Ttl.
Anderson	1	0	2	3
Angelina	1	0	1	2
Bowie	1	0	0	1
Cherokee	2	0	1	3
Ellis	1	0	0	1
Franklin	0	1	0	1
Freestone	1	0	2	3
Gregg	19	13	115	147
Henderson	1	0	0	1
Hunt	1	0	1	2
Kaufman	0	1	0	1
Leon	3	1	0	4
Limestone	0	1	1	2
Morris	1	0	0	1
Navarro	1	0	0	1
Rains	1	0	0	1
Rusk	20	12	85	117
Smith	3	1	4	8
Upshur	6	3	8	17
Van Zandt	2	4	6	12
Total December	64	37	227	328
Total November	64	27	262	353
Difference	0	10	35	25

WELLS COMPLETED

ANGELINA COUNTY

H. C. Jennings et al's No. 3 Colmorgan abd

Wells completed 1
Abandoned 1

FREESTONE COUNTY

Humble Oil & Ref. Co.'s No. 1 Dietz Bros. abd

Wells completed 1
Abandoned 1

HENDERSON COUNTY

Laco Oil Co.'s No. 1 George Pace abd

Wells completed 1
Abandoned 1

HOPKINS COUNTY

Hager et al's No. 1 W. A. Irwin abd

Wells completed 1
Abandoned 1

GREGG COUNTY

W. D. Ambrose's No. 9 George Jones, open tubing, ¼ hr. 48
W. D. Ambrose's No. 4 George Jones, open tubing, ¼ hr. 48
W. D. Ambrose's No. 5 George Jones, open tubing, ¼ hr. 48
Atlantic Oil & Prod. Co.'s No. 22-B Burnside, open tubing, ¼ hr. 40
Atlantic Oil & Prod. Co.'s No. 23-B Burnside, open tubing, ¼ hr. 40
Atlantic Oil & Prod. Co.'s No. 10 Wilson, open tubing, ¼ hr. 40
East Texas Ref. Co.'s No. 16 F. White, open tubing, ½ hr. 50
Fleming & Kimble's No. 7 J. A. Barnes, open tubing 90
Harry Hanburry's No. 1-B T. L. Bray, open tubing 65
Humble Oil & Ref. Co.'s No. 6 Clements, open tubing, ¼ hr. 18
Humble Oil & Ref. Co.'s No. 5 Hughes, ⅝-in. tubing choke 64
Humble Oil & Ref. Co.'s No. 11-A D. Johnson, ⅝-in. tubing choke 87
Iowa Payne Oil Co.'s No. 4 J. W. Akin, open tubing, 20 min. 20
Magnolia Pet. Co.'s No. 7 Clem Jones, open tubing 110
Shell Pet. Corp.'s No. 5-B Moore, open tubing, ¼ hr. 77
Tide Water Oil Co.'s No. 1 B. A. Skipper, open tubing 40
Twin Oil Co.'s No. 5 M. Bonner, open tubing, ¼ hr. 25
Wilcox Oil Co.'s No. 3 Godfrey, open tubing, ½ hr. 30
Douglass-Williams' No. 2 C. L. Taylor, open tubing 115
Yount Lee Oil Co.'s No. 7 Fleminster, 11/16-in. tubing choke 59
Texas Co.'s No. 27 M. T. Cole, open tubing 70
American Liberty Oil Co.'s No. 8 L. P. Griffin, open tubing 120
Byrd-Frost Oil Co.'s No. 1 M. B. Hughey, open tubing 100
Gulf Prod. Co.'s No. 25-A Spear, open tubing 70
W. D. Hill et al's No. 1 J. S. and F. Elder, open tubing 30
Rhoads Drlg. Co.'s No. 24 Sabine River, open tubing, ½ hr. 50
Rhoads Drlg. Co.'s No. 23 Sabine River, open tubing, 20 min. 50
Shell Pet. Corp.'s No. 9 Willoughby, open tubing, ¼ hr. 15
M. N. Travis's No. 1 I.&G.N. R.R., open tubing 50
Amada Oil Co.'s No. 2 Jones, open tubing 85
Arkansas Fuel Oil Co.'s No. 6 B. Calvin, open tubing, ½ hr. 67
Arkansas Fuel Oil Co.'s No. 5 H. Stephens, open tubing, ½ hr. 65
Atlantic Oil & Prod. Co.'s No. 24-A Burnside, open tubing 85
Cal Pet. Corp.'s No. 7 W. M. Clements, open tubing 70
Thomas Carter's No. 3 Barnswell-Anderson, open tubing, ¼ hr. 15
Continental Oil Co.'s No. 6 B. C. Todd, open tubing 85
Empire Gas & Fuel Co.'s No. 8 J. W. Akin, open tubing 78
Empire Gas & Fuel Co.'s No. 11 L. A. Jeter, open tubing 70
Empire Gas & Fuel Co.'s No. 17 T. W. Lee, open tubing 80
Faith Oil Co.'s No. 8 J. C. Barrett, open tubing, ½ hr. 32
Guiberson Oil Co.'s No. 4 Thrasher-Stucky, open tubing 100
Humble Oil & Ref. Co.'s No. 14 J. F. Boles, ⅝-in. tubing choke 70
Humble Oil & Ref. Co.'s No. 27 W. R. Hughes, ⅝-in. tubing choke 58
Humble Oil & Ref. Co.'s No. 6 J. M. McFarland, ⅝-in. tubing 70
Iron Rock Oil Co.'s No. 2 Foshee, open tubing, 20 min. 40
Margay Oil Co.'s No. 4 T. Christian, open tubing 75
J. H. Massie et al's No. 7 M. Fenn, open tubing 75
Meridian Pet. Corp.'s No. 7 T. W. Lee, open tubing, ½ hr. 55
Simms-Rush's No. 13 Flewellen, open tubing, ½ hr. 20
Stanolind Oil & Gas Co.'s No. 8 G. F. Meadows, open tubing, ¼ hr. 17
Tide Water Oil Co.'s No. 10 A. F. Sheppard, open tubing, 10 min. 14
W. F. Turner's No. 7 A. Jones, open tubing 90
H. F. Wilcox Oil & Gas Co.'s No. 2 Godfrey, open tubing, ½ hr. 60
Yount Lee Oil Co.'s No. 10 Hopkins, 11/16-in. tubing choke 62
Yount Lee Oil Co.'s No. 5-A E. M. Whatley, 11/16-in. tubing choke 58
Burton et al's No. 1 D. Smith, open tubing 75
Cranfill & Reynolds' No. 5 Scott, open tubing, ¼ hr. 13
Humble Oil & Ref. Co.'s No. 1 Roger Lacy abd
John Mabee's No. 13 M. T. Cole, open tubing 100
Magnolia Pet. Co.'s No. 14 J. Radford, open tubing 100
Rhoads Drlg. Co.'s No. 18 Sabine River, open tubing, ½ hr. 50
Rhoads Drlg. Co.'s No. 31 Sabine River, open tubing, ½ hr. 50
Sinclair Prairie Oil Co.'s No. 32-A A. A. King, open tubing, ¼ hr. 35
Sinclair Prairie Oil Co.'s No. 38-B A. A. King, open tubing, ¼ hr. 30
Sun Oil Co.'s No. 11 Grand Reese, 1½-in. tubing choke 52
Tide Water Oil Co.'s No. 16 M. G. Barton, open tubing, 5 min. 16
Tide Water Oil Co.'s No. 16 M. G. Barton, open tubing, 5 min. 12
Arkansas Fuel Oil Co.'s No. 3-A McPherson, open tubing, 6 hr. 67
Arkansas Fuel Oil Co.'s No. 6-B F. B. McPherson, open tubing, ½ hr. 55
Arkansas Fuel Oil Co.'s No. 7-B McPherson, open tubing, ½ hr. 65
Atlantic Oil & Prod. Co.'s No. 23-A Burnside, open tubing 30
Atlantic Oil & Prod. Co.'s No. 21-B Burnside, open tubing 85
G. T. Blankenship's No. 1 R. B. White, open tubing 65
J. B. Bond's No. 2 R. K. Johnson, open tubing, ½ hr. 40
Bond & Dillard's No. 6 J. C. Barrett, open tubing 80
Bond & Dillard's No. 8 J. C. Barrett, open tubing 110
East Texas Oil & Ref. Co.'s No. 14 F. White, open tubing, 40 min. 40
Empire Gas & Fuel Oil Co.'s No. 7 J. C. Bumpass, open tubing, ¼ hr. 22
Empire Gas & Fuel Oil Co.'s No. 12 L. A. Jeter, open tubing, ¼ hr. 24
F. H. E. Oil Co.'s No. 11 B. C. Christian, open tubing 90
Galvez Oil Co.'s No. 5 M. A. Sheppard, open tubing 60
Gulf Prod. Co.'s No. 16 S. C. Fishburn, open tubing 92
Gulf Prod. Co.'s No. 51 Judge, open tubing 74
Gulf Prod. Co.'s No. 53 Judge, open tubing 78
Humble Oil & Ref. Co.'s No. 28 W. R. Hughes, ⅝-in. tubing choke 58
Humble Oil & Ref. Co.'s No. 4-B D. Johnson, ⅝-in. tubing choke 61
Kewanee Oil Corp.'s No. 16 fee, open tubing, ¼ hr. 25
Perrin & Feil's No. 3 E. E. Anderson, open tubing 90
Roeser & Pendleton's No. 8 E. Nicholson, open tubing 90
Roeser & Pendleton's No. 9 E. Nicholson, open tubing, 45 min. 35
Shasta Oil Co.'s No. 6-A T. B. Campbell, open tubing, ¼ hr. 25
Shell Pet. Corp.'s No. 5 G. Jones, open tubin, ½ hr. 27
Shell Pet. Corp.'s No. 12 A. N. and V. King, open tubing, ½ hr. 42
Sinclair Prairie Oil Co.'s No. 3 Monchief, open tubing, ½ hr. 30
Sun Oil Co.'s No. 15 J. W. Akin, 1½-in. tubing choke 55
Sun Oil Co.'s No. 20 J. M. Haynes, 1½-in. tubing choke 56
Superior Oil Co.'s No. 8 Jones, open tubing, ¼ hr. 42
Yount Lee Oil Co.'s No. 8 Stuckey-Thrasher, 11/16-in. tubing choke 62
American Liberty Oil Co.'s No. 7 L. P. Griffin, open tubing, ¼ hr. 31
Baggett et al's No. 3 King, open tubing 35
Empire Gas & Fuel Oil Co.'s No. 6 Muckelroy, open tubing, ½ hr. 22
Gulf Prod. Co.'s No. 9 Ben Watson, open tubing 80
Kent Oil Co.'s No. 3 Sabine River, open tubing 106
John Mabee's No. 18 M. T. Cole, open tubing, 40 min. 110
Magnolia Pet. Co.'s No. 15 J. Radford, open tubing 104
Randall's No. 1 Anderson-Williams, open tubing 75
Rhoads Drlg. Co.'s No. 14 Sabine River, open tubing, ½ hr. 50
Rhoads Drlg. Co.'s No. 25 Sabine River, open tubing, ½ hr. 50
Rhoads Drlg. Co.'s No. 30 Sabine River, open tubing, ½ hr. 50
Selby Oil & Gas Co.'s No. 6 M. T. Cole, 1-in. tubing choke 57
James R. Curtis' No. 2 E. Hagler, open tubing 140
Sun Oil Co.'s No. 26 M. T. Cole, 1½-in. tubing choke 53
Texas Co.'s No. 25 M. T. Cole, open tubing 67
Arkansas Fuel Oil Co.'s No. 7 L. D. Allison, open tubing, ½ hr. 73
Almeda Oil Corp.'s No. 4 Doby, open tubing, ½ hr. 40
Atlantic Oil & Prod. Co.'s No. 16 Duncan, open tubing 90
Atlantic Oil & Prod. Co.'s No. 4-A Tooke, open tubing 85
Bay Oil Corp.'s No. 6 J. M. Wheeler, open tubing 100
Deep Rock Oil Co.'s No. 5 B. Jones, open tubing 85
Empire Gas & Fuel Oil Co.'s No. 9 J. W. Akin, open tubing 85
Faith Oil Corp.'s No. 5 J. J. Fuller, open tubing, ½ hr. 32
Fritz et al's No. 1 E. E. Anderson, open tubing 100
Gulf Prod. Co.'s No. 49 Judge, open tubing 75
Humble Oil & Ref. Co.'s No. 13 J. F. Boles, open tubing 60
Humble Oil & Ref. Co.'s No. 6 H. Castleberry, open tubing, ¼ hr. 10
Humble Oil & Ref. Co.'s No. 5 E. W. Clements, open tubing, ¼ hr. 18
Lester & Duffield's No. 3 J. C. McKinley, open tubing, ¼ hr. 18
Long Drlg. Co.'s No. 3-A W. W. Owens, open tubing 150
Magnolia Pet. Co.'s No. 6 J. H. Beavers, open tubing 144
Meridian Pet. Co.'s No. 8 T. W. Lee, open tubing 100
Rajo Oil Co.'s No. 6 J. C. Barrett, open tubing 50
Selby Oil & Gas Co.'s No. 8 C. Snavely heirs abd
Shell Pet. Corp.'s No. 15 Burnside, open tubing, ¼ hr. 15
Shell Pet. Corp.'s No. 4-B Moore, open tubing 40
Shell Pet. Corp.'s No. 13 G. W. Richey, open tubing 45
Sinclair Prairie Oil Co.'s No. 11-B J. W. Akin, open tubing, ¼ hr. 31
Stanolind-Simms Oil Co. et al's No. 13-C Flewellen, open tubing, ¼ hr. 11
Sun Oil Co.'s No. 11 Saterwhite, open tubing 48
Tide Water Oil Co.'s No. 1 C. B. Everett, open tubing, 10 min. 12
W. F. Turner's No. 8 A. Jones, open tubing 95
Yount Lee Oil Co.'s No. 9-A J. D. Davis, 11/16-in. tubing choke 58
Cranfill & Reynolds' No. 6 L. Howard, open tubing, ¼ hr. 15
Delta Drlg. Co.'s No. 5 M. B. Hughey, open tubing 60
H. W. Elliott's No. 4 A. Godfrey, open tubing, ¼ hr. 30
C. P. Greenwood's No. 2 Loughridge, open tubing 25
T. A. Johnson's No. 6-B M. T. Cole, open tubing 72
John Mabee's No. 14 M. T. Cole, open tubing 100
John Mabee's No. 15 M. T. Cole, open tubing, 40 min. 110
Magnolia Pet. Co.'s No. 5 L. Andrews, open tubing 112
Milford Pet. Co.'s No. 2 W. S. Smith, open tubing, 5 min. 11
Rhoads Drlg. Co.'s No. 22 Sabine River, open tubing, ½ hr. 50
T. L. James & Co.'s No. 6 Sabine River, open tubing 100
Sun Oil Co.'s No. 11 W. M. Penticost, open tubing 78
Titan Oil Co.'s No. 3-C M. Dickson, open tubing, ½ hr. 12

Wells completed 155
Initial production 9200
Abandoned 2

RUSK COUNTY

Abercrombie & Harrison's No. 4 Cantrell, open tubing 125
American Liberty Oil Co.'s No. 12 R. W. Fair, open tubing 85
Devonian Oil Co.'s No. 10 J. Alford, open tubing 90
Humble Oil & Ref. Co.'s No. 3 George Alexander, swabbing 15
Humble Oil & Ref. Co.'s No. 39-A M. M. Kangerga, open tubing 59
Hunt Prod. Co.'s No. 8 Reed, open tubing, 16 min. 25
Hunt Prod. Co.'s No. 3 Thompson, open tubing, ¼ hr. 25
Hunt Prod. Co.'s No. 5-A S. Wilson, open tubing, 11 min. 35
American Liberty Oil Co.'s No. 2 Brock, open tubing, ¼ hr. 35
Empire Gas & Fuel Oil Co.'s No. 8 H. P. Leverett, open tubing, ½ hr. 24
Humble Oil & Ref. Co.'s No. 10-S L. D. Crim, open tubing 102
Humble Oil & Ref. Co.'s No. 34-B S. S. Laird, ⅝-in. tubing 60
Jones and Atlantic Prod. Co.'s No. 5-B J. M. Crim, open tubing 92
McCullough & Zilke's No. 1 Hindman, ½-in. tubing choke 100
Snowden & McSweeney's No. 7 F. Bean, open tubing 70
Magnolia Pet. Co.'s No. 1 R. N. Neal abd
Mid-Kansas Oil & Gas Co.'s No. 53 M. M. Cross, open tubing 76
Mid-Kansas Oil & Gas Co.'s No. 55 M. M. Cross, open tubing 80
Mid-Kansas Oil & Gas Co.'s No. 2 Kersh, open tubing 60
Imperator Oil Co.'s No. 1 D. C. Joiner 70
Octo Oil Co.'s No. 2 Ofton Thrash, open tubing 125
Olsen Bros. and Johnson, open tubing, ½ hr. 70
Pansey Oil Co.'s No. 1 W. H. Frederick, pumping, 5 hrs. 20
Sinclair Prairie Oil Co.'s No. 8 J. B. Wilson, open tubing, ½ hr. 40
Sonbar Oil Co.'s No. 7 A. P. Finney, open tubing 50
Stanolind and Pure Oil Co.'s No. 24 R. A. Jones, open tubing, ½ hr. 25
Sun Oil Co.'s No. 4 Schuler & Schuler, open tubing 80
Texas Co.'s No. 8 J. W. Turner, open tubing 50
East Texas Oil & Ref. Co.'s No. 7 Andy Givens, open tubing, ¼ hr. 20
Humble Oil & Ref. Co.'s No. 105 L. D. Crim, ⅝-in. tubing 75
Humble Oil & Ref. Co.'s No. 41-B S. S. Laird, ⅝-in. tubing 80
Humble Oil & Ref. Co.'s No. 21 J. N. Peterson, ⅝-in. tubing choke 75
Kathleen Oil Co.'s No. 6 J. N. Peterson, open tubing 150
Magnolia Pet. Co.'s No. 7 Dick Wells, open tubing, ¼ hr. 16
Rector & Davidson's No. 2 W. N. Brightwell, open tubing, 20 min. 50
East Texas Oil & Ref. Co.'s No. 5-C Ashby, open tubing 25
Falcon Oil Co.'s No. 8 T. O. Mason, open tubing, ¼ hr. 10
Humble Oil & Ref. Co.'s No. 5 D. C. Joiner, ⅝-in. tubing choke 60
Humble Oil & Ref. Co.'s No. 4-C R. E. L. Silvey, ⅝-in. tubing 80
Humble Oil & Ref. Co.'s No. 3-A C. Young, ⅝-in. tubing 86
Humble Oil & Ref. Co.'s No. 15-C J. T. Thompson, open tubing 108
Hunt Prod. Co.'s No. 10-B Bradford, pumping, per day 20
Rodgers et al's No. 2 Joe Lee, open tubing 30
Sinclair Prairie Oil Co.'s No. 44 W. P. Kinney, open tubing, ¼ hr. 30
Sinclair Prairie Oil Co.'s No. 45 W. P. Kinney, open tubing, ¼ hr. 40
Skelly Oil Co.'s No. 4 Jones, open tubing 75
Lexena Oil Co.'s No. 5 J. Cox, open tubing, 35 min. 30
Spansco Oil Co.'s No. 5 W. P. Brett, open tubing, ½ hr. 45
Tide Water Oil Co.'s No. 7 Irion, open tubing, ¼ hr. 20
Tress Oil Co.'s No. 1 C. Ashby, swabbing, 3 hrs. 20
Grady Vaughn's No. 5 L. P. Thrash, open tubing, 45 min. 90
Gulf Prod. Co.'s No. 3 W. A. Henderson, open tubing 55
Houston Oil Co.'s No. 4-A W. P. Brightwell, open tubing, ¼ hr. 40
Humble Oil & Ref. Co.'s No. 87 L. D. Crim, open tubing 90
Humble Oil & Ref. Co.'s No. 94 L. D. Crim, open tubing 70
Humble Oil & Ref. Co.'s No. 104 L. D. Crim, ⅝-in. tubing choke 75
Humble Oil & Ref. Co.'s No. 24-A S. S. Laird, open tubing 80
K. & P. Oil Co.'s No. 5 Brock estate, open tubing, ½ hr. 50
Magnolia Pet. Co.'s No. 8 D. Wells, open tubing, ¼ hr. 15
Marine Oil Corp.'s No. 7 N. Bean, open tubing 70
Navarro Oil Co.'s No. 2 R. N. Brightwell, open tubing, ½ hr. 45
Shell Pet. Corp.'s No. 9 J. H. Spivey, open tubing, ½ hr. 33
Tide Water Oil Co.'s No. 12-A J. S. Bean, open tubing, 5 min. 5
Tide Water Oil Co.'s No. 7-A F. L. Buntyn, open tubing, ¼ hr. 28
Amerada Pet. Corp.'s No. 14 J. Stovall, open tubing, 20 min. 52
American Liberty Oil Co.'s No. 11 R. W. Fair, open tubing, ½ hr. 32
American Liberty Oil Co.'s No. 9 Pinkston, open tubing, 20 min. 30
R. M. Biddison's No. 4 J. W. Wheelis, open tubing 85
Humble Oil & Ref. Co.'s No. 18 A. D. Blackwell, ⅝-in. tubing choke 70
Humble Oil & Ref. Co.'s No. 31 A. D. Blackwell, ⅝-in. tubing 70
Humble Oil & Ref. Co.'s No. 7 M. D. Cladwell, ⅝-in. tubing 73
Humble Oil & Ref. Co.'s No. 37-A Kangerga, open tubing 96
Humble Oil & Ref. Co.'s No. 3-B Turner, ⅝-in. tubing choke 64
Hunt Prod. Co.'s No. 15-C R. W. Fair, open tubing, 12 min. 35
Hunt Prod. Co.'s No. 12 H. C. Maxwell, open tubing, 18 min. 37
Hunt Prod. Co.'s No. 12 C. Young, open tubing, 13 min. 25
Leath & Bateman's No. 1 W. W. Hammett abd
Lion Oil & Ref. Co.'s No. 13-B H. Brooks, open tubing 60
R. J. McMurray's No. 4 R. W. Fair, open tubing 70
Mid-Kansas Oil & Gas Co.'s No. 64 M. M. Cross, open tubing 80
Mid-Kansas Oil & Gas Co.'s No. 65 M. M. Cross, open tubing 68
Mid-Kansas Oil & Gas Co.'s No. 9 R. G. Mason, open tubing 44
Ortiz Oil Co.'s No. 8 H. M. Poole, open tubing, 2 hrs. 80
Sinclair Prairie Oil Co.'s No. 5 D. Bradford, swabbing, 20 min. 20
Sinclair Prairie Oil Co.'s No. 43 W. D. Kinney, open tubing, ¼ hr. 34
Sinclair Prairie Oil Co.'s No. 47 Kinney, open tubing, ¼ hr. 35
Tex-Jersey Oil Co.'s No. 3 Cora Hannah, open tubing, ¼ hr. 40
E. M. Thomasson's No. 2 M. L. Thompson, open tubing 60
Turman Oil Co.'s No. 8 Robert, open tubing 120
Ward Oil Co.'s No. 19 E. S. Thrash, open tubing 57
Wheelock & Collins' No. 5-D Wells, open tubing 75
A. J. Rife Construction Co.'s No. 3 Giles, open tubing 37
Bowles Oil Co.'s No. 6 Dick Wells, open tubing 75
East Texas Oil & Ref. Co.'s No. 8 Givens, open tubing 100
Humble Oil & Ref. Co.'s No. 88 L. D. Crim, ⅝-in. tubing choke 75

Humble Oil & Ref. Co.'s No. 106 L. D. Crim, open tubing 112
Humble Oil & Ref. Co.'s No. 107 L. D. Crim, open tubing 112
Humble Oil & Ref. Co.'s No. 25-A S. S. Laird, open tubing 94
Eddie Jones' No. 5 Hindman, open tubing 100
Rubin & Nadel's No. 3 D. Wills, open tubing 75
Snowden & McSweeney's No. 6 F. Bean, open tubing, ½ hr. 35
Tide Water Oil Co.'s No. 9 H. P. Leverett, open tubing, ½ hr. 35
Wheelock & Collins' No. 3 Dick Wells, open tubing 75
Amerada Pet. Corp.'s No. 16 T. J. Stovall, open tubing 85
Combine Oil Interest's No. 17 G. W. Eaton, open tubing 54
Goodnight & Donald's No. 1 Neal, open tubing 350
George Greer's No. 2 R. P. Grambling, open tubing, 10 min. 13
Hunt Prod. Co.'s No. 9-D Bradford, 3 hrs. pumping 20
McMahon & McCullough's No. 7 Joe Lee, open tubing 25
J. E. Mabee's No. 6 W. P. Brett, open tubing, 40 min. 110
Mid-Kansas Oil & Gas Co.'s No. 16 H. C. and G. W. Burton, open tubing. 80
Mid-Kansas Oil & Gas Co.'s No. 66 M. M. Cross, ⅛-in. tubing choke 68
Mid-Kansas Oil & Gas Co.'s No. 17 S. H. Moores, open tubing 76
Spansco Oil Co.'s No. 6 W. P. Brett, open tubing, ¼ hr. 20
Stanolind and Pure Oil Co.'s No. 22 Moores, open tubing, 17 min. 26
Stanolind and Pure Oil Co.'s No. 23 Moore, open tubing, 18 min. 26
Stanolind and Pure Oil Co.'s No. 42 W. H. Siler ..... abd
Tress Oil Co.'s No. 2 W. M. Camp, pumping, 8 hrs. 20

Wells completed 118
Initial production 7499
Abandoned 3

SMITH COUNTY

Arcadia Ref. Co.'s No. 2-B J. R. Green, open tubing 80
Barney Cockburn's No. 1 L. Jackson and Atterbery, pumping, 3 hrs. 40
J. R. Gaskey's No. 1 F. Cole, open tubing 75
Amazon Pet. Corp.'s No. 3 T. O. Wright, open tubing 75
Hunt Prod. Co.'s No. 14-A R. W. Fair, open tubing, ¼ hr. 40
Hunt Prod. Co.'s No. 15-A R. W. Fair, open tubing, ¼ hr. 40
Nash & Strickland's No. 3 T. O. Wright, open tubing, ½ hr. 70
Professional Oil Co.'s No. 3 T. O. Wright, ¾-in. tubing choke, 25 min. 31
Sinclair Prairie Oil Co.'s No. 25-A Mayfield, open tubing, ¼ hr. 35
Sinclair Prairie Oil Co.'s No. 26-A Mayfield, open tubing, ¼ hr. 35
Sun Oil Co.'s No. 15 O. W. Knight, open tubing 85
Texas Co.'s No. 10 J. W. Wilson, open tubing 96
Texas Co.'s No. 12 M. Blackwell, open tubing 65
Weaver-Crim Corp.'s No. 7 T. Stone, open tubing 100
Mid-Kansas Oil & Gas Co.'s No. 19 J. H. Sharp, 2-in. tubing 76
Byers et al's No. 2 F. Cole, open tubing 10 min. 30
Sinclair Prairie Oil Co.'s No. 22-C Jarvis, open tubing, ¼ hr. 30

Wells completed 17
Initial production 1003

UPSHUR COUNTY

Steen Drlg. Co.'s No. 4-A Lodin, open tubing 90
Stroube & Stroube's No. 9 R. J. Mackey, open tubing 45
Sun Oil Co.'s No. 2 John O'Byrne, open tubing 30
Humble Oil & Ref. Co.'s No. 6 Edwards, open tubing, ¼ hr. 16
Humble Oil & Ref. Co.'s No. 3 J. K. Edwards, open tubing, ¼ hr. 16
East Texas Oil & Ref. Co.'s No. 8 D. Doby, open tubing, 20 min. 28
Roberts et al's No. 4 Jenkins, open tubing 85
J. A. Wood et al's No. 6 J. A. Sheppard, open tubing 85
J. Zeppa's No. 4 Victory, open tubing.. 86
C. H. Brown et al's No. 1 Willie Starr, open tubing 417
Chatam Oil Co.'s No. 5 H. Fenton, open tubing 50
B. F. Phillips' No. 1 fee ..... abd
Simms & Buttram's No. 15 Nicholson, open tubing, ¼ hr. 22
Steen Drlg. Co.'s No. 6 J. F. Phillips, open tubing 75
Strouble & Strouble's No. 10 R. J. Mackey, open tubing 65

Wells completed 15
Initial production 1110
Abandoned 1

VAN ZANDT COUNTY

Pure Oil Co.'s No. 6 A. W. Ellison, 24 hrs. on choke 78
D. C. Delcambre's No. 1 A. Crim, per day, pumping 3

Wells completed 2
Initial production 81

Panhandle Fields

Summary of Wells Completed

County—	Comp.	Prod.	Abd.	Gas
Gray	15	4,472	0	3
Hutchinson	6	2,790	0	1
Oldham	1	0	1	0
Wheeler	1	0	0	1
Total	23	7,262	1	5
Total last month	17	4,012	2	1
Difference	6	3,250	1	4

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drlg.	Ttl.
Carson	2	2	3	7
Childress	3	2	0	3
Gray	8	6	23	37
Hutchinson	3	2	10	15
Hemphill	0	1	0	1
Moore	2	2	4	8
Roberts	0	1	0	1
Wheeler	2	1	5	8
Total	18	17	45	80
Total last month	10	17	34	61
Difference	8	0	11	19

WELLS COMPLETED
GRAY COUNTY

Saulsbury Oil Co.'s No. 1 Carpenter ... abd
Thorp and Dawson's No. 1 Short 200
Phillips Pet. Co.'s No. 1 Benton 72
Southern Pet. Explin. Co.'s No. 2 Heard 175
C. Back's No. 2 fee ..... gas
Chism et al's No. 1 J. M. Carpenter ... 150
Magnolia Pet. Co.'s No. 1 Webb ..... gas
Mid-Kansas Oil & Gas Co.'s No. 3 Webb 150
Saulsbury Oil Co.'s No. 2 Cubine ..... gas
Continental Oil Co.'s No. 7 Finley-Brown 125
Continental Oil Co.'s No. 3 Wright 72
Phillips Pet. Co.'s No. 4 Combs-Worley 1135
Phillips Pet. Co.'s No. 7 Wright 1185
Sinclair Prairie Oil Co.'s No. 3 Combs-Worley 840
Texas Co.'s No. 8 Wright 365

Completions 15
Initial production 4472
Gas wells 2

HUTCHINSON COUNTY

Huber Pet. Co.'s No. 2 M. E. Dunnaway gas
Sinclair Prairie Oil Co.'s No. 44 Johnson (old well drilled deeper) 510
Continental Oil Co.'s No. 2 Johnson ...1970
J. E. Crosbie's No. 5 Petts 140
H. Stekol's No. 1 G. A. Whittenburg .. 45
Texas Co.'s No. 2 P. L. Pond 125

Completions 6
Initial production 2790
Gas wells 1

OLDHAM COUNTY

Chambers et al's No. 1 Henry ..... abd

Completions 1
Abandoned 1

WHEELER COUNTY

Ward and Delaney's No. 1 Sitter ..... gas

Completions 1
Gas wells 1

West Texas Fields

Summary of Wells Completed

County—	Comp.	Prod.	Abd.	Gas
Fisher	1	165	0	0
Glasscock	1	30	0	0
Howard	2	65	0	0
Irion	2	30	1	0
Jones	1	0	1	0
Pecos	5	5,754	1	0
Ward	6	1,674	0	0
Total	18	7,718	2	0
Total last month	36	10,981	5	0
Difference	18	3,263	3	0

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drlg.	Ttl.
Brewster	0	0	1	1
Concho	0	0	1	1
Crane	0	0	3	3
Crockett	1	1	0	2
Dawson	0	0	1	1
Ector	4	0	7	11
Fisher	3	0	7	10
Gaines	0	0	1	1
Glasscock	3	1	4	8
Howard	3	3	5	11
Irion	0	1	0	1
Jones	2	2	3	7
Loving	3	0	1	4
Pecos	8	3	10	21
Reagan	2	1	3	6
Runnels	1	0	5	6
Scurry	0	4	4	8
Terrell	0	2	1	3
Upton	0	0	1	1
Ward	3	3	17	23
Winkler	2	2	4	8
Total	35	23	79	137
Total last month	30	26	67	123
Difference	5	3	12	14

WELLS COMPLETED
FISHER COUNTY

Texas Co.'s No. 3 T. A. Jean 165

Completions 1
Initial production 165

GLASSCOCK COUNTY

Noel T. Lawson et al's No. 4 M. M. Edwards 30

Completions ..... —
Initial production 30

HOWARD COUNTY

Group No. 1 Oil Co. and Continental Oil Co.'s No. 6 G. W. Overton 25
Sinclair Prairie Oil Co.'s No. 8 G. M. Dodge 40

Completions 2
Initial production 65

IRION COUNTY

Bristow et al's No. 1 J. N. Nutt 30
Strawn and Adkins' No. 2 Kuiser ..... abd

Completions 2
Initial production 30
Abandoned 1

JONES COUNTY

Clay-Lancaster, Inc.'s No. 1 E. C. Brown abd

Completions 1
Abandoned 1

PECOS COUNTY

Mac. T. Anderson's No. 1 E. M. Roots.. abd
Mid-Kansas O. & G. Co.'s No. 21 Smith-Taylor 206
Mid-Kansas O. & G. Co.'s No. 4 Fred Turner 3449
Mid-Kansas O. & G. Co.'s No. 35-A I. G. Yates 2099
G. S. Messinger's No. 1 W. R. Jones .. abd

Completions 5
Initial production 5754
Abandoned 1

WARD COUNTY

E. E. Sturm's No. 1 Jones 75
Texas Pacific Coal & Oil Co.'s No. 8 Jones 61
Gulf Prod. Co.'s No. 37 O'Brien 313
Atlantic Oil Producing Co.'s No. 11 W. D. Johnson 85
Atlantic Oil Producing Co.'s No. 8 W. D. Johnson 500
W. A. Black's No. 1 J. F. York 640

Completions 6
Initial production 1674

Southwest Texas Fields

Summary of Field Operations

Pool—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Agua Dulce	0	0	0	0	0	1	1
Byersville	3	125	1	0	1	1	2
Carolina-Tex.	0	0	0	0	0	1	1
Cedar Creek	1	200	0	0	1	0	1
Cuevitas	5	400	3	1	1	3	4
Crowther	1	0	1	0	0	0	0
Cole (West)	0	0	0	0	0	1	1
Cole (East)	0	0	0	0	0	2	2
Dale (North)	3	200	2	0	0	2	2
Dunlap	0	0	0	0	0	1	1
Eagle Hill	3	740	0	1	0	3	3
Eckert	5	41	0	0	0	6	6
Escobas	1	60	0	0	0	1	1
N. Gov. Wells	24	13,532	2	1	0	12	12
S. Gov. Wells	4	857	0	0	1	1	2
Ignacio	0	0	0	0	1	0	1
Jacobs	1	20	0	0	1	2	3
Jennings	0	0	0	0	0	3	3
Kohler	1	0	1	0	0	0	0
N. Kohler	1	0	0	1	0	0	0
King	0	0	0	0	1	0	1
Kingsville	0	0	0	0	1	1	2
LaPryor	1	0	1	0	0	0	0
Laurel	0	0	0	0	0	1	1
Los Olmos	0	0	0	0	0	1	1
Martinez	2	0	0	2	1	0	1
New Berlin	0	0	0	0	0	1	1
Palangano	0	0	0	0	0	1	1
Pettus	0	0	0	0	0	1	1
Schimmel	1	0	1	0	0	0	0
SRC	1	0	0	0	0	1	1
Von Ormy	1	0	1	0	1	0	1
Webster	0	0	0	0	0	1	1
Miscellaneous	34	2,350	30	1	20	66	86
Total Dec.	92	18,525	43	7	30	113	143
Total Nov.	82	16,879	32	7	32	98	130
Difference	10	1,646	11	0	2	15	13

WELLS COMPLETED
CEDAR CREEK—BASTROP COUNTY

Rowe, Cole Pet. Co. 2 200
NORTH DALE POOL—BASTROP COUNTY
Spradlin, Ogden & Reed 1 200
C. L. Riddle, Marts & Beavens 4 ..... abd
M. F. Tailey, Ogden & Reed 2 ..... abd
SCHIMMEL POOL—BASTROP COUNTY
C. A. Smith, Marts & Beavens 1 ..... abd
ECKERT POOL—BEXAR COUNTY
J. E. Halbardier, Rosate & Co. 12 7
Sandemer, Trio Oil Co. 5 12
J. E. Halbardier, Rosate & Co. 11 6
Mrs. Ida Beck, Gatlin Oil Co. 17 12
August Brehm, Eckert & Son 4 4
VON ORMY POOL—BEXAR COUNTY
Fee, A. J. Trawalter 1 ..... abd
EAGLE HILL POOL—DUVAL COUNTY
Foster, Al Buchanan (Point Isabel O. & G. Co.) 1-B ..... gas
Duval Co. Ranch Co., Al Buchanan 2.. 500
Duval County Ranch Co., The Texas Co. 5-A 240
NORTH GOV. WELLS POOL—DUVAL COUNTY
Duval Co. Ranch Co., Humble O. & R. Co. 2 1794
C. W. Hahl, Humble O. & R. Co. 22 ... 720
C. W. Hahl, Humble O. & R. Co. 23 ... 350
C. W. Hahl, Humble O. & R. Co. 24 ... abd
C. W. Hahl, Humble O. & R. Co. 25 ...1128
C. W. Hahl, Humble O. & R. Co. 26 ...1200
Lundell, Rodney DeLange 2 100
Duval Ranch Co., Magnolia Pet. Co. 7.. 200
Duval Ranch Co., Magnolia Pet. Co. 8.. 288
Duval Ranch Co., Magnolia Pet. Co. 9.. 144
Duval Ranch Co., Magnolia Pet. Co. 10. 200
C. W. Hahl, Navarro Oil Co. 27 ..... abd
C. W. Hahl, Navarro Oil Co. 27-A 100
Duval Co. Ranch Co., Reynosa Oil Corp. 2-D 960
Duval Co. Ranch Co., Reynosa Oil Co. 2-D 960
Riley, Russ Pet. Co. 3 720
Welderkehr, Sun Oil Co. 9 288
Welderkehr, Sun Oil Co. 11 360
Welderkehr, Sun Oil Co. 12 150
Welderkehr, Sun Oil Co. 13 480
Welderkehr, Sun Oil Co. 14 840
Welderkehr, Sun Oil Co. 15 ..... gas
Fee, The Texas Co. 1 1200
W. C. Riggs, The Texas Co. 6 1440
S. GOV. WELLS POOL—DUVAL COUNTY
Lundell, K. O. T. Oil Co. 2 50
Lundell, Magnolia Pet. Co. 3 290
Paul White, Humble O. & R. Co. 13 ... 175
P. E. White, Humble O. & R. Co. 14 ... 432
KOHLER POOL—DUVAL COUNTY
Kohler, Humble O. & R. Co. 22 ..... abd
N. KOHLER POOL—DUVAL COUNTY
Peters, Highland and Shasta 2-D ..... gas
CROWTHER POOL—McMULLEN COUNTY
Jacob, Leonard Jacob Corp. 1 ..... abd
JACOBS POOL—McMULLEN COUNTY
Jacob, Loma Oil Co. 20-A 20
CUEVITAS POOL—STARR COUNTY
M. Guerra, Sun Oil Co. 3-B ..... abd
Guerra, Sun Oil Co. 6-A ..... abd
Guerra, Wm. McGinley 2 ..... abd
Guerra, Sun Oil Co. 2-B 400
Guerra, Sun Oil Co. 8-A ..... gas
BYERSVILLE POOL—WILLIAMSON COUNTY
Zeischang, Taylor Prod. Co. 3 ..... abd
J. S. Jones, Taylor Prod. Co. 1 100
Gutierrez, Allied Oil & Gas Co. 39 25
ESCOBAS POOL—ZAPATA COUNTY
Whitehead, The Texas Co. 34 60
MARTINEZ POOL—ZAPATA COUNTY
Henne-Winch, United Prod. Co. 2 ..... gas
Manuel Trevino heirs, W. R. Shankle and Wm. McGinley ..... gas
LAPRYOR POOL—ZAVALA COUNTY
LaPryor, Anglin Oil & Gas Co. 7 ..... abd

Wells completed 58
Production 16,175
Tests abandoned 13
Gas production 90,000,000

MISCELLANEOUS COUNTIES
ATASCOSA COUNTY

Blankenship, E. O. Burton 1 ..... abd
Smith & Mowinkle, Dan McMahon 1 .. abd
BASTROP COUNTY
H. A. Rowe, Cole Pet. Co. 1 10
BEE COUNTY
Weiss, W. P. McLain 1 ..... gas
BEXAR COUNTY
Wm. Russell, Montgomery & Ririe 1 ... abd
Stumberg, Motes-Campbell 2 ..... abd
J. M. Coffey, Howard Nesmly 1 ..... abd
C. A. Goeth, H. A. Pagenkopf 1 ..... abd
Julius Doehne, D. C. Pegg 1 ..... abd
CALDWELL COUNTY
Walker, Hinton & Dodson 1 ..... abd
BEXAR COUNTY
E. L. Kempf, W. L. Umburn 1 ..... abd
DUVAL COUNTY
C. W. Hahl, Bridwell Oil Co. 1 240
Hagist, Gilbert & Clayes 1 ..... abd
Wood-Welder, O. W. Killam 3 ..... abd
Wood-Welder, O. W. Killam 4 ..... abd
J. B. Peal, G. G. Mortimer 2 ..... abd
Hoffman, Plymouth Oil Co. 3 ..... abd
Hagist, Trinity Drillers 1 ..... abd
GUADALUPE COUNTY
Greenwood est., Potter et al 1 ..... abd
MILAM COUNTY
R. R. Clark, J. K. Wells et al 1 ..... abd
McMULLEN COUNTY
Hagist, Paul C. Teas 3 ..... abd
H. F. G. Wulf, Two Rivers Oil Co. 1 ... abd
NUECES COUNTY
T. C. Ingram, Banquette Oil Co. 1 2100
J. O. Pickham, Bendum & Trees 1 .... abd
Poenisch, S. F. Hurlbut & Southwest Oil Co. 1 ..... abd
STARR COUNTY
Walker, Goodwin & Yantis 2 ..... abd
TRAVIS COUNTY
Smith est., Fritz Fuchs 2-B ..... abd
Sandahl, Marts & Beavens 1 ..... abd
WILLIAMSON COUNTY
Burns estate, Humble O. & R. Co. 1 .. abd
ZAPATA COUNTY
Bustemente, J. C. O'Haver 1 ..... abd
Juan V. Cuellar, Jr., Sarah Pappas 1 .. abd
M. Garza est., Circle W Oil Co. 1 .... abd
Gopher Trust estate, Arthur H. Wray 3. abd
ZAVALA COUNTY
Pryor, Anglin O. & G. Co. 6 ..... abd

Wells completed 34
Production 2350
Tests abandoned 30
Gas production 1,250,000

North Texas

Summary of Wells Completed

County—	Comp.	Prod.	Abd.	Gas
Archer	50	2,620	17	0
Brown	9	2,981	6	0
Callahan	1	0	1	0
Clay	1	0	1	0
Coleman	4	22	2	0
Eastland	1	7	0	0
Erath	1	0	0	1
Jack	2	45	0	0
Montague	4	72	1	0
Palo Pinto	2	0	2	0
Shackelford	7	153	3	0
Stephens	3	0	3	0
Throckmorton	1	0	1	0
Wichita	2	52	0	0
Wilbarger	2	0	2	0
Wise	1	0	1	0
Young	27	422	18	0
Total December	118	6,374	58	1
Total November	127	8,401	47	1
Difference	9	2,027	11	0

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drlg.	Ttl.
Archer	12	6	40	58
Baylor	0	1	2	3
Brown	3	2	3	8
Callahan	1	2	3	6
Clay	2	0	3	5
Coleman	2	2	3	7
Eastland	3	2	2	7
Erath	0	1	1	2
Foard	0	2	2	4
Grayson	0	1	3	4
Jack	0	1	2	3
Johnson	0	2	0	2
Montague	1	1	4	6
Palo Pinto	2	2	3	7
Parker	1	1	2	4
Shackelford	2	3	4	9
Stephens	3	1	7	11
Taylor	0	1	3	4
Throckmorton	0	1	3	4
Wichita	3	3	4	10
Wilbarger	1	0	6	7
Wise	0	2	0	2
Young	6	5	20	31
Total December	42	42	120	204
Total November	49	46	98	193
Difference	7	4	22	11

WELLS COMPLETED
ARCHER COUNTY

Achnig & Egger's No. 1 W. P. Ferguson abd
Bridwell Oil Co.'s No. 24 Oil Investment Co. 15
W. T. Hutchinson's No. 1 Andrews 22
Sutherland & Gray's No. 1 Ferguson .. abd
C. W. Boller's No. 3 Perkins 150
Bonner Oil Co.'s No. 4 M. B. Ray 125
Continental Oil Co.'s No. 4 Falls County School Lands 107
Continental Oil Co.'s No. 2 Falls County School Lands 125

Conoco and Cullum's No. 11 Falls County School Lands 200
Fain & McGaha's No. 1 Parkey ..... abd
Jack Grace's No. 3 Andrews 40
W. B. Hamilton's No. 22 Abercrombie.. 55
W. B. Hamilton's No. 9 Winfield-Ikard. 174
Humble Oil & Refining Co.'s No. 5 Hamilton 55
King Royalty Co.'s No. 2 Abercrombie.. 25
A. P. Louri's No. 1 Montgomery 4
A. C. Parks' No. 1 Ownes ..... abd
Perkins & Cullum's No. 2 Falls-Boyles . 235
Perkins & Cullum's No. 3 Falls-Boyles.. 65
Perkins & Cullum's No. 4 Falls-Boyles.. abd
G. R. Ridgeway ..... abd
Sinclair Prairie Oil Co.'s No. 5 Falls-Boyles ..... abd
S. V. White's No. 1 J. E. Koller ..... abd
Fain & McGaha's No. 13 Ferguson 15
Fain & McGaha's No. 14 Ferguson 13
Fain & McGaha's No. 15 Ferguson 10
Hellams & Kress' No. 1 Jens 8
Huggins Oil Co.'s No. 1 Parkey ..... abd
Jennings et al's No. 1 Ferguson ..... abd
Whitehill Oil Corp.'s No. 22 Morrison.. 5
C. L. Abercrombie's No. 4 Abercrombie. 40
C. W. Boller's No. 11 Perkins 50
L. T. Burns' No. 1 W. L. King ..... abd
W. R. Cooper et al's No. 2 Hamilton .. 80
Gl Oil Co.'s No. 1 Perkins 60
Gl Oil Co.'s No. 2 Perkins 60
W. B. Hamilton's No. 20 Abercrombie.. 117
W. B. Hamilton's No. 23 Abercrombie.. 80
W. B. Hamilton's No. 8 Cartwright 200
W. B. Hamilton's No. 9 Cartwright 165
W. B. Hamilton's No. 1 Graham ..... abd
W. B. Hamilton's 10 Ikard 120
Helena Oil & Gas Co.'s No. 7 Ray 50
King Royalty Co.'s No. 3 Abercrombie.. abd
King Royalty Co.'s No. 1 McAnnally.... abd
Ozoso Oil Co.'s No. 1 K. K. Cox ..... abd
G. L. Pace's No. 6 Arnold 75
Perkins & Cullum's No. 1 Andrews .... abd
Perkins & Cullum's No. 4 Boyles-Falls. 75
Petroleum Producers Co.'s No. 1 Prideaux ..... abd

Wells completed 50
Initial production 2620
Abandoned 17

BROWN COUNTY

R. C. Carter et al's No. 1-C W. M. Favor abd
Green & Ice's No. 1 W. B. Browder.... abd
Johnson's No. 1 C. E. Taylor ..... abd
Armstrong & Wallace's No. 2 Whiteside 96
Gray et al's No. 1 J. E. Whiteside ..... abd
Petroleum Interest's No. 1 Cox and McGinnis ..... abd
Dick Richardson's No. 1 Claude Weeden abd
Wayne Hammon et al's No. 2 Mathews 1600
S. B. Owens' No. 10 Lynch 1285

Wells completed 9
Initial production 2981
Abandoned 6

CALLAHAN COUNTY

Ed Gulling et al's No. 1 J. A. Reid... abd

Wells completed 1
Abandoned 1

CLAY COUNTY

J. E. Keller's No. 2 George ..... abd

Wells completed 1
Abandoned 1

COLEMAN COUNTY

Mace et al's No. 12 J. M. Byrd 20
R. H. Murray et al's No. 1 R. E. Harris abd
Continental Oil Co.'s No. 1 M. T. Overall ..... abd
Dave Duncan's No. 1 E. W. Polk 2

Wells completed 4
Initial production 22
Abandoned 2

EASTLAND COUNTY

I. T. Arnold's No. 1 M. E. Miller 7

Wells completed 1
Initial production 7

ERATH COUNTY

Southern Union Gas Co.'s No. 1 Vincent gas

Wells completed 1
Gas 1

JACK COUNTY

F. H. E. Oil Co.'s No. 3 Gillespie 20
L. J. Jeff's No. 1 J. N. Box 25

Wells completed 2
Initial production 45

MONTAGUE COUNTY

Bridwell Oil Co.'s No. 1 Bigley 25
Texas Co.'s No. 3 Cunningham 18
Bridwell Oil Co.'s No. 1 Lay ..... abd
Carter & Rycade's No. 16 Cunningham. 30

Wells completed 4
Initial production 72
Abandoned 1

PALO PINTO COUNTY

Webb-Dalton et al's No. 1-A Dalton ... abd
R. C. Albright's No. 1 Allen-Ritchie... abd

Wells completed 2
Abandoned 2

SHACKELFORD COUNTY

Sleepy Harris' No. 1 H. H. Horton .... abd
Shyrock et al's No. 1 E. H. Brooks .... abd
Wilson Drlg. Co.'s No. 5 Morris and Buie 80
Albany Oil Co.'s No. 6 Jeter 60
Lowe & Dulaney's No. 1 Ackers 8
Poly Oil Co. et al's No. 2 Spears ..... abd
A. C. Walker's No. 1 S. Walker 5

Wells completed 7
Initial production 153
Abandoned 3

STEPHENS COUNTY

Donley & Chastain's No. 2 M. B. Hawkins ..... abd
W. G. Carter's No. 1 J. M. Cook ..... abd
Magnoli et al's No. 2 F. A. Manning ... abd

Wells completed 3
Abandoned 3

THROCKMORTON COUNTY

J. W. Robinson's No. 1 Mallock ..... abd

Wells completed 1
Abandoned 1

WICHITA COUNTY

G. W. Cooper's No. 25 Waggoner Bros.. 50
Aarco Oil Co.'s No. 20-A J. E. Roller.. 2

Wells completed 2
Initial production 52

WILBARGER COUNTY

John O'Neil's No. 1 S. H. Fields ..... abd
John O'Neil's No. 8 Castleberry ..... abd

Wells completed 2
Abandoned 2

WISE COUNTY

General Mineral Co. et al's No. 1 Travellers Ins. Co. ..... abd

Wells completed 1
Abandoned 1

YOUNG COUNTY

F. Ard, Jr.'s No. 5 Belknap ..... abd
James B. Baker, Jr.'s No. 2 Smith .... abd
J. D. Dillard's No. 1 Newman ..... abd
R. P. Dorian et al's No. 1 Hennig..... abd
F. H. E. Oil Co.'s No. 1 Mahler ..... abd
Iron Mt. Oil Co.'s No. 3 Jordan 10
Maer & Hamilton's No. 6 Jeffery 100
W. R. Stafford's No. 1 L. R. Drum .... abd
Wheeler & Brashear's No. 1 Jeffery .. abd
White & Duncan's No. 8 Smith ..... abd
Wooten & Reed's No. 7 Henson 15
W. C. Young's No. 1 Newman ..... abd
Belknap Oil Co.'s No. 1 Belknap 100
F. E. Butler's No. 1 Clareda ..... abd
Cabie Oil Co.'s No. 4 A. Williams 30
J. D. Dillard's No. 1 Baker ..... abd
N. B. Dollins' No. 1 Foster ..... abd
Maer & Hamilton's No. 7 Jeffery .... abd
Panhandle Ref. Co.'s No. 3 Morris 2
Pitzer & West's No. 3 Williamson 115
A. and S. P. Schmitt's No. 1 Casey .... abd
C. P. Sheldon's No. 1 Johnson ..... abd
Underwood Drlg. Co.'s No. 2 Eichelberger ..... abd
White & Duncan's No. 6 Smith ..... abd
White & Duncan's No. 9 Smith 40
Worth Oil Co.'s No. 10 Snider ..... abd
Rathke Oil Co.'s No. 1 Johnson 10

Wells completed 27
Initial production 422
Abandoned 18

Gulf Coast Fields

Summary of Field Operations

Texas

Field—	Comp.	Prod.	Abd.	Gas	Rigs	Dlg.	Ttl.
Arriola	0	0	0	0	0	1	1
Barbers Hill	7	4,838	1	0	3	12	15
Batson	3	355	1	0	0	1	1
Big Creek	0	0	1	0	0	2	2
Boling	0	0	0	0	0	1	1
Buckeye	0	0	0	0	0	2	2
Blue Ridge	0	0	0	0	0	1	1
Conroe	32	50,969	2	0	12	19	31
Clay Creek	2	78	1	0	0	2	2
Damon Mnd.	0	0	0	0	0	1	1
Esperson	1	120	0	0	0	2	2
Fannett	0	0	0	0	0	1	1
Goose Creek	2	1,000	0	0	1	1	2
Greta	20	7,673	1	0	11	19	30
High Island	2	1,285	0	0	4	1	5
Hull	7	5,076	0	0	4	10	14
Humble	1	100	1	0	0	1	1
Livingston	6	1,910	2	0	1	7	8
Louise	1	234	0	0	0	8	8
Manvel	1	0	1	0	1	3	4
McFaddin	0	0	0	0	0	4	4
Mykawa	0	0	0	0	0	2	2
Nash	1	0	1	0	0	0	0
No. Dayton	0	0	0	0	0	1	1
Orchard	0	0	0	0	0	1	1
Orange	0	0	0	0	0	1	1
Pierce Jct.	3	1,730	1	0	0	2	2
Pledger	1	44	0	0	0	0	0
Port Neches	0	0	0	0	0	3	3
Stratton Rdg.	0	0	0	0	1	0	1
Saratoga	0	0	0	0	0	2	2
Sour Lake	0	0	0	0	0	1	1
Sugarland	0	0	0	0	1	0	1
Thompson	3	2,424	1	0	0	7	7
Tomball	9	2,152	2	3	4	11	15
Miscellaneous	14	0	13	1	12	50	62
Total Dec.	116	80,038	29	4	55	180	235
Total Nov.	121	92,396	23	2	44	196	240
Difference.	5	12,358	6	2	11	16	5

South Louisiana

Black Bayou	0	0	0	0	0	1	1
Cailliou Isl.	0	0	0	0	0	1	1
Cameron Md.	0	0	0	0	1	2	3
Choctaw	0	0	0	0	0	1	1
Darrow	1	0	1	0	0	0	0
Edgerly	0	0	0	0	0	3	3
Evangeline	2	30	1	0	0	1	1
Hackberry, E.	2	45	0	1	3	4	7
Gueydan	0	0	0	0	1	1	2
New Iberia	0	0	0	0	0	1	1
Iowa	1	1,013	0	0	0	7	7
Lake Barre	1	0	1	0	3	2	5
Lake Pelto	0	0	0	0	0	1	1
L. Washing'n	0	0	0	0	0	1	1
Leesville	3	1,960	0	0	2	5	7
Lockport	1	125	0	0	1	4	5
Port Barre	2	500	1	0	1	3	2
Sorrento	0	0	1	0	0	2	2
Sweet Lake	0	0	0	0	1	0	1
Starks	2	1,100	1	0	0	1	1
Sulphur	0	0	0	0	1	4	5
Vinton	2	240	0	0	4	6	10
Miscellaneous	3	0	3	0	5	25	30
Total Dec.	20	5,013	9	1	23	76	99
Total Nov.	17	10,925	7	0	27	64	91
Difference.	3	5,912	2	1	4	12	8

Gulf Coast Total							
Total Dec.	136	85,051	38	5	78	256	334
Total Nov.	138	103,321	30	2	71	260	331
Difference.	2	18,270	8	3	7	4	3

TEXAS

WELLS COMPLETED

BARBERS HILL—CHAMBERS COUNTY

Tarbutton, Bashara Oil Co. 2 768
Kirby, Humble O. & R. Co. 3-C 798
L. Wilburn, Sun Oil Co. 16 1008
Wilburn, Sinclair Prairie Oil Co. 14... abd
Wilburn, Sinclair Prairie Oil Co. 16... 120
Fitzgerald, Texas Co. 2 1594
Chambers County, Yount Lee Oil Co. 21 600

Wells completed 7
Production 4888
Abandoned 1

BATSON—HARDIN COUNTY

Producers, Ada Belle Oil Co. 162 5
Producers, Ada Belle Oil Co. 161 350
Buchanan, Christian 2 ..... abd

Wells completed 3
Production 355
Abandoned 1

BIG CREEK—FORT BEND COUNTY

Wheat, McPhail 1 ..... abd

CLAY CREEK—WASHINGTON COUNTY

Clay, Sun Oil Co. 9 ..... abd
Janner, Sun Oil Co. 7 78

Wells completed 2
Production 78
Abandoned 1

CONROE—MONTGOMERY COUNTY

Hensley, Alpha Pet. Co. 1 1680
Kirby-Bertrand, Feltex Oil Co. 2 ..... abd
Llewlen, Aditex Oil Co. 1 2640
Keystone Mills, Gulf Coast D. & P. Co. 16-A 1728
Keystone Mills, Gulf Coast D. & P. Co. 17-A 1872
Keystone Mills, Gulf Coast D. & P. Co. 18-A 1920
Keystone Mills, Gulf Coast D. & P. Co. 28-A 1920
Lola McShan, Harrison & Abercrombie 1 1440
Hooper, Hooper & Rutherford 6 1560
Cartwright, Humble O. & R. Co. 8-A ... 1968
Dodson & Williams, Humble O. & R. Co. 1 1632
Emery, Humble O. & R. Co. 9 1800
Madeley, Humble O. & R. Co. 21 1848
Madeley, Humble O. & R. Co. 27 1856
Moore, Humble O. & R. Co. 17 1704
Moore, Humble O. & R. Co. 19 1896
So. Texas Dev. Co., Humble O. & R. Co. 54 1920
So. Texas Dev. Co., Humble O. & R. Co. 57 2112
So. Texas Dev. Co., Humble O. & R. Co. 59 1272
So. Texas Dev. Co., Humble O. & R. Co. 4-D 1704
So. Texas Dev. Co., Humble O. & R. Co. 1-F 2088
Harris Est. Southern Liberty Oil Co. 1. 480
Hammond, Strake Pet., Inc. 2 ..... abd
Krohn, Strake Pet., Inc. 2 1632
Krohn, Strake Pet., Inc. 4 2040
Foster, Sun Oil Co. 24 2048
Foster, Sun Oil Co. 30 1032
Keystone Mills, Sun Oil Co. 4 2304
McDonald, Sun Oil Co. 2 2064
Stevens, Texas Unity Oil Co. 2 672
Lewis, Tide Water Co. 29 2112
Foster Lbr. Co., West Prod. Co. 1 25

Wells completed 32
Production 50,269
Abandoned 2

ESPERSON—LIBERTY COUNTY

Moore's Bluff, Cranfill-Reynolds Co. 11. 130

GOOSE CREEK—HARRIS COUNTY

Washington-Texas Prod. Co., Smith-Faust 1 15
Tabb, Gulf Prod. Co. 17 1000

Wells completed 2
Production 1015

GRETA—REFUGIO COUNTY

J. J. O'Brien, Atlantic O. P. Co. 1-B ... 528
J. M. O'Brien, Atlantic O. P. Co. 1-F ... 95
J. M. O'Brien, Atlantic O. P. Co. 2-F ... 600
J. F. E. Heard, Atlantic O. P. Co. et al 1 480
O'Brien, Atlantic O. P. Co. 5-C 440
O'Brien, Circle W. O. Co. 9 1272
O'Brien, Circle W. O. Co. 10 500
J. J. O'Brien, Floboots O. Corp. 1-B 720
J. M. O'Brien, Floboots O. Corp. 2-A ... 167
F. Heard, D. D. Oil Co. 1 144
M. F. Lambert, Hewett & Daugherty 2. 125
F. Heard, Humble O. & R. Co. 1 ..... abd
J. M. O'Brien, E. M. Jones 3-A 240
J. M. O'Brien, E. M. Jones 4-A 410
J. M. O'Brien, J. M. Jones 9-A 405
O'Connor, Nesral Oil Co. 3 260
O'Connor, Nesral Oil Co. 4 280
T. O'Connor, Southwest Oil Corp. 1 320
W. T. Fox, United Prod. Co. 10 437
Lambert, United Prod. Co. 5 250

Wells completed 20
Production 7673
Abandoned 1

HIGH ISLAND—GALVESTON COUNTY

Smith, Lount Lee Oil Co. 1 950
Cade, Yount Lee Oil Co. 37 335

Wells completed 2
Production 1285

HULL—LIBERTY COUNTY

Hooks-Guedry, Humble O. & R. Co. 30. 936
Hooks-Guedry, Humble O. & R. Co. 32. 960
Hooks-Guedry, Humble O. & R. Co. 29. 528
Hooks-Guedry, Humble O. & R. Co. 28. 984
McAllester, Liberty-Hull Oil Co. 2 224
Phoenix, Miramar Oil Corp. 6 196
Carr, Sun Oil Co. 1 1248

Wells completed 7
Production 5076

HUMBLE—HARRIS COUNTY

House, Texas Co. 27 ..... abd
Cicero, Wilson Oil Co. 1 100

Wells completed 2
Production 100
Abandoned 1

PIERCE JUNCTION—HARRIS COUNTY

Settegast, Rio Bravo Oil Co. 25-A ..... abd
Taylor, Gulf Prod. Co. 37 1700
Herman Est., Cogswell et al 1 30

Wells completed 3
Production 1730
Abandoned 1

LIVINGSTON—POLK COUNTY

Grandbury, Humble O. & R. Co. 3 .... abd
Grandbury, Humble O. & R. Co. 4 636
W. R. Crockett, Polk County Oil Co. 1. 75
Sanders, Skelly Oil Co. 2 575
O. L. Munson, Shell Pet. Corp. 1 624
Jones, Shell Pet. Corp. 1 ..... abd

Wells completed 6
Production 1910
Abandoned 2

LOUISE—WHARTON COUNTY

Stewart, Pure Oil Co. 1 234

McFADDIN DISTRICT—REFUGIO AND VICTORIA COUNTIES

O'Connor, Humble O. & R. Co. 10 480

MANVEL—BRAZORIA COUNTY

Ellis, Texas Co. 1 ..... abd

NASH—FORT BEND COUNTY

Nash, Harrison-Abercrombie 16 ..... abd

PLEDGER—BRAZORIA COUNTY

Hunt, Danciger O. & R. Co. 2 44

THOMPSON—FORT BEND COUNTY

Gubbles, Humble O. & R. Co. 6-A 1224
Lockwood & Sharp, Humble O. & R. Co. 18-B 1200
Mulverhill, West Len Oil Co. 1 ..... abd

Wells completed 2
Production 2424
Abandoned 1

TOMBALL—HARRIS COUNTY

Shearer, Humble O. & R. Co. 1 648
M. J. Kuehn, Humble O. & R. Co. 1 ... 640
Fletcher, Amerada Pet. Corp. et al 1 .. gas
Kobs, Humble O. & R. Co. 2-B ..... abd
Rudel-Oster, Magnolia Pet. Co. 1 ..... gas
Hirsch, Texas Co. 1 480
W. B. Schearer, Texas Co. 1 384
Rudel-Oster, Magnolia Pet. Co. 1 ..... gas
Hilligust, Texas Co. 1 ..... abd

Wells completed 9
Production 3152
Abandoned 2
Gas 2

Miscellaneous Texas Wildcats

BRAZORIA COUNTY

McCain, Barnsdall and Superior Oil Co. of Calif. 1 ..... abd

COLORADO COUNTY

Janecka, Weimar Dev. Co. 1 ..... abd

FORT BEND COUNTY

Pilant Lake—Great Southern, Quintana Oil Co. 1 ..... abd

HARRIS COUNTY

Genoa—Syndicate, Jack Scheultz et al 1 abd

JEFFERSON COUNTY

Sheek—Paggi, Sun Oil et al 1 ..... abd

LIBERTY COUNTY

Nona Mills Lbr. Co., W. W. Algren 1.. abd

MONTGOMERY COUNTY

B. C. Aylor, Turnball & Irwin 1 ..... abd

POLK COUNTY

Stephenson, C. E. Stewart 1 ..... abd

REFUGIO COUNTY

K. Roach, Wellington Oil Co. 1 ..... abd
Rooke, Texas Co. 1 ..... abd

SAN JACINTO COUNTY

J. J. West Lbr. Co., Turnbull & Irwin 1. abd

TYLER COUNTY

Seaman, Marshall & Denton 1 ..... abd

VICTORIA COUNTY

Coleeta Creek—Maurer, John Camp 1.. gas

WALLER COUNTY

Petera, King & Puckett 1 ..... abd

South Louisiana

DARROW—ASCENSION PARISH

Darrow Community, Gulf Ref. Co. 1 .. abd

HACKBERRY—CAMERON PARISH

Duhon, Francis Little 1 45
Humble, Union Sulphur Co. 8 ..... gas

Wells completed 2
Production 45
Gas 1

IOWA—CALCASIEU PARISH

Heyd, Shell Pet. Corp. 5 1013

JENNINGS—ACADIA PARISH

Latrielle, S. Rhodes 104 30
Rawson & Haber, Reliable Oil Co. 3 ... abd

Wells completed 2
Production 30
Abandoned 1

LAKE BARRE—TERREBONNE PARISH

State—Lake Barre, Texas Co. 23 ... abd

LEESVILLE—LAFOURCHE PARISH

City New Orleans, Gulf Ref. Co. 2 240
L.L.&E., Texas Co. 9 1680
Moss, Union Sulphur Co. 1 40

Wells completed 3
Production 1960

LOCKPORT—CALCASIEU PARISH

Farquahar, Magnolia Pet. Co. 9 125

PORT BARRE—ST. LANDRY PARISH

Thompson, Cal O. & G. Co. 1 500
Jeonsonne, Campbell et al 1 ..... abd

Wells completed 2
Production 500
Abandoned 1

STARKS—CALCASIEU PARISH

Industrial Lbr. Co., Union Sulphur Co. 2 abd
Fee, Union Sulphur Co. 786 1100

Wells completed 2
Production 1100
Abandoned 1

VINTON—CALCASIEU PARISH

J. W. Gardner, Gulf Ref. Co. 7 225
Rescue, Vinton Pet. Co. 7 15

Wells completed 2
Production 240

Miscellaneous Louisiana Wildcats

ST. LANDRY PARISH

Lewis, Bailey Gounce 1 ..... abd

VERNON PARISH

Fullerton Mineral Co., Glen J. Smith 1 abd

EAST BATON ROUGE PARISH

Louisiana Inv. Co., British American Oil Co. 1 ..... abd

East Texas Border Counties

Summary of Field Operations

	Comp.	Prod.	Dry Gas	Rgs.	Drlg.	Ttl.
Bowie	1	0	1	0	0	0	0
Cass	0	0	0	0	0	1	1

Harrison	0	0	0	0	0	2	2
Marion	0	0	0	0	0	2	2
Panola	2	40	0	0	4	6	10
Shelby	0	0	0	0	0	1	1
Ttl. Dec.	3	40	1	0	4	12	16
Ttl. Nov.	3	0	3	0	2	16	18
Difference	0	40	2	0	2	4	2

Louisiana Fields

Summary of Field Operations

	Comp.	Prod.	Dry Gas*	Rgs.	Drlg.	Ttl.
Avoyelles	0	0	0	0	1	1
Beauregard	0	0	0	0	1	1
Bienville	0	0	0	0	1	1
Bossier	2	78	1	0	1	5
Caddo	1	0	1	0	4	9
Caldwell	0	0	0	0	1	2
Catahoula	0	0	0	0	1	1
Claiborne	0	0	0	0	3	1
Concordia	0	0	0	0	1	0
DeSoto	1	0	1	0	5	11
Grant	0	0	0	0	0	2
Jackson	0	0	0	0	0	1
Morehouse	0	0	0	0	1	2
Natchitoches	0	0	0	0	1	4
Ouachita	2	0	0	2	5	5
Rapides	0	0	0	0	4	1
Red River	0	0	0	0	2	2
Sabine	23	2,535	6	0	34	52
Tensas	0	0	0	0	0	1
Union	1	0	0	1	2	0
Vernon	1	0	1	0	1	0
Webster	2	0	2	0	1	0
Winn	0	0	0	0	0	2
Ttl. Dec.	33	2,613	12	3	68	103
Ttl. Nov.	29	2,744	20	5	56	106
Difference	4	131	8	2	2	3

*Gas production: Ouachita Parish, 18,000,000 feet; Union Parish, 11,500,000 feet; total, 29,500,000 feet.

WELLS COMPLETED

BOSSIER PARISH

25-19-12 Fee, Cryer Oil Co. 1 ..... dry
13-17-12 Skannell Unit, United Gas Public Service Co. 1 78

CADDO PARISH

23-16-13 Macmillan, R. E. Davison 1 .. dry

DESOTO PARISH

4-14-12 Guy, Gravel Point Synd. 1 ..... dry

SABINE PARISH

4- 9-13 Whiting Corp., Calatex Oil & Gas Co. 1 40
9- 9-13 Paul, Commerce Oil Co. 1 50
32- 8-11 Billbray, Crescent Drlg. Co. 1-A dry
4- 7-13 Martinez, J. L. Elliott 1 ..... dry
35- 8-13 Stille, P. L. Flannery 1 ..... dry
20- 9-13 Crawford, Florence Oil Co. 1.. 40
1- 9-13 Patrick heirs, Mamie S. Hammonds 1 ..... dry
19- 9-13 Pugh, Helena Oil & Gas Co. 1 100
9- 9-13 Tatum, Helena Oil & Gas Co. 1 dry
10- 9-13 Jackson, W. F. Lacey 1 100
21- 9-13 Frost Lbr. Ind., Laurel Pet. Co. 3 65
21- 9-13 Frost Lbr. Ind., Laurel Pet. Co. 4 120
29- 9-13 Henderson, Lula M. Layton 1. 75
21 9-13 Patrick, C. L. Nixon 1 10
29- 8-11 La. Long Leaf Lbr. Co., Pelican Nat. Gas Co. 26 52
7- 7-11 Sabine Lbr. Co., Pelican Nat. Gas Co. 11 1250
10- 9-13 Burkett, L. L. Posey 1 40
10- 9-13 Burkett, L. L. Posey 2 200
7- 7-11 Sabine Lbr. Co., C. T. Ruffin 1 30
20- 9-13 Graham, Sabine Royalty Co. 1 40
7- 7-10 Smith, Service Drlg. & Royalties Co. 1-B 200
23- 9-13 Bowman-Hicks, Tex-La-Ark Oil Co. 3 200
20- 9-13 Graham, Windsor Oil Co. 2-A. 45

Production 2535

OUACHITA PARISH

15-18-4e Breard, Century Carbon Co. 1. gas
17-19-4e Hatcher, Hatcher & Evans 9.. gas

Gas production 18,000,000

UNION PARISH

7-20-4e Fee, Southern Carbon Co. 63.. gas

Gas production 11,500,000

VERNON PARISH

3-1n-4w Fullerton Mineral Co., Smith, Burton & Kelly 1 ..... dry

WEBSTER PARISH

29-18-9 Miller, J. P. Evans 1 ..... dry
20-19-8 Bridgeman, Gulf Ref. Co. 1 .... dry

Mississippi Fields

Summary of Field Operations

	Comp.	Prod.	Dry Gas*	Rgs.	Drlg.	Ttl.
Greene	0	0	0	0	1	1
Hinds	2	0	1	1	0	4
Lamar	0	0	0	0	1	1
Madison	0	0	0	0	0	1
Newton	0	0	0	0	0	1
Pike	0	0	0	0	1	0
Rankin	0	0	0	0	1	3
Scott	0	0	0	0	0	1
Simpson	0	0	0	0	0	1
Tallahatchie	0	0	0	0	0	1
Walthall	0	0	0	0	1	0
Warren	0	0	0	0	0	1
Wayne	0	0	0	0	1	0
Wilkinson	0	0	0	0	0	1
Ttl. Dec.	2	0	1	1	5	16
Ttl. Nov.	3	0	2	1	5	17
Difference	1	0	1	0	0	1

*Gas production: Hinds, 25,000,000 feet.

WELLS COMPLETED

HINDS COUNTY

7- 7-3w Gaddis, Lionel Pet. Co. 1 .... dry
24- 6-1e Nelson, Meredith Trading Co. 1 gas

Gas production 25,300,000

PEARL RIVER COUNTY

27-25-14 Himes Lbr. Co., Glassell & Smith 1 ... .loc. abd.

Arkansas Fields

Summary of Field Operations

	Comp.	Prod.	Dry Gas	Rgs.	Drlg.	Ttl.
Arkansas	0	0	0	0	1	1
Columbia	1	12	0	0	2	2
Conway	0	0	0	0	1	1
Hempstead	0	0	0	0	1	1
Jefferson	0	0	0	0	1	1
Lafayette	0	0	0	0	2	2
Little River	0	0	0	0	2	2
Lonoke	0	0	0	0	1	1
Miller	0	0	0	0	3	12
Nevada	0	0	0	0	1	2
Ouachita	1	70	0	0	0	3
Poinsett	0	0	0	0	0	1
Union	0	0	0	0	3	8
Woodruff	0	0	0	0	0	1
Yell	1	0	1	0	0	0
Ttl. Dec.	3	82	1	0	8	38
Ttl. Nov.	1	0	1	0	6	39
Difference	2	82	0	0	2	1

WELLS COMPLETED

COLUMBIA COUNTY

11-15-20 Garney, O. F. Whittaker 1 ... 12

OUACHITA COUNTY

23-15-16 Primm, J. E. Crosbie 1 70

Alabama Fields

Summary of Field Operations

	Comp.	Prod.	Dry Gas	Rgs.	Drlg.	Ttl.
Baldwin	0	0	0	0	1	1
Lamar	0	0	0	0	1	1
Washington	0	0	0	0	1	1
Ttl. Dec.	0	0	0	0	3	3
Ttl. Nov.	0	0	0	0	3	3
Difference	0	0	0	0	0	0

Rocky Mountain Area

NEW MEXICO

Summary of Field Operations

County—	Comp.	Prod.	Dry Gas	Rgs.	Drlg.	Ttl.
Eddy	3	10	1	1	0	16
Lea	0	0	0	0	1	4
McKinley	0	0	0	0	0	7
San Juan	0	0	0	0	1	1
San Miguel	0	0	0	0	0	4
Santa Fe	0	0	0	0	0	3
Valencia	0	0	0	0	0	3
Miscellaneous	0	0	0	0	0	16
Ttl. Dec.	3	10	1	1	2	55
Ttl. Nov.	3	1,578	0	0	2	55
Difference	0	1,568	1	1	0	0

WELLS COMPLETED

7-17-30 Root, C. H. Lockhart et al 2 .. dry
22-17-29 State, Harry Leonard 9 ..... gas
29-17-29 Green, Western Drlg. Co. 2-A.. 10

Wells completed	3
Production	10
Gas	1
Gas production	100,000
Dry and abandoned	1

COLORADO

Summary of Field Operations

County—	Comp.	Prod.	Dry Gas	Rgs.	Drlg.	Ttl.
Archuleta	0	0	0	0	1	4
Boulder	0	0	0	0	0	4
Elbert	0	0	0	0	0	3
Grand	1	0	1	0	0	1
Jackson	0	0	0	0	0	5
Larimer	0	0	0	0	0	5
Las Animas	0	0	0	0	0	2
Moffat	1	0	0	0	1	7
Morgan	0	0	0	0	0	1
Routt	0	0	0	0	0	1
Weld	0	0	0	0	0	3
Miscellaneous	0	0	0	0	1	19
Ttl. Dec.	2	0	1	1	5	52
Ttl. Nov.	5	1,101	1	2	4	46
Difference	3	1,101	0	1	1	6

WELLS COMPLETED

22-12-100 Wilson, Mtn. Fuel Supply 2 .. gas
14-2n- 81 McElroy, Oil & Mineral Lands, Inc. 1 ..... dry

Wells completed	2
Gas	1
Gas production	1,000,000
Dry and abandoned	1

WYOMING

Summary of Field Operations

County—	Comp.	Prod.	Dry Gas	Rgs.	Drlg.	Ttl.
Big Horn	0	0	0	0	1	6
Carbon	2	100	0	1	0	6
Converse	0	0	0	0	0	2
Crook	0	0	0	0	0	7
Fremont	0	0	0	0	0	3
Hot Springs	0	0	0	0	0	3
Natrona	0	0	0	0	3	7
Niobrara	1	0	0	1	0	2
Sweetwater	0	0	0	0	1	3
Sublet	1	0	1	0	0	2
Uinta	0	0	0	0	0	6
Weston	1	15	0	0	2	3
Miscellaneous	0	0	0	0	0	11
Ttl. Dec.	5	115	1	2	7	62
Ttl. Nov.	6	558	1	2	7	60
Difference	1	443	0	0	0	2

WELLS COMPLETED

16-46- 64 Riggs Oil Co. 3 15
12-28-114 Govt., Cretaceous Oil Co. 1 .. dry
6-35- 65 Joss, J. M. Huber Corp. .... gas
12-18- 78 Dutton Cr. Mutual Oil Synd. 9-X ..... gas
12-18- 78 Dutton Cr. Mutual Oil Synd. 9 100

Wells completed	5
Production	115
Gas	2
Gas production	3,500,000
Dry and abandoned	1

MONTANA

Summary of Field Operations

County—	Comp.	Prod.	Dry Gas	Rgs.	Drlg.	Ttl.
Carbon	0	0	0	0	4	4
Glacier	6	215	1	1	4	21
Hill	1	0	0	1	0	1
Liberty	0	0	0	0	0	4
Petroleum	1	0	1	0	0	3
Teton	0	0	0	0	0	3
Toole	0	0	0	0	0	6
Miscellaneous	0	0	0	0	1	11
Ttl. Dec.	8	215	2	2	5	53
Ttl. Nov.	12	270	4	4	8	46
Difference	4	55	2	2	3	7

WELLS COMPLETED

3-13-26 Oregon-Flatwillow Oil Co. 1 .. abd
29-27-15 Morris, Fargo O. & G. 1 .... gas
27-35-6w Weaver, Lon Crumley 1 90
14-35-6w Fisk, Texas Co. 1 10
2-34-6w Hinkle, Texas Co. 1 105
20-35-5w Haines, Montana Power Gas 1 gas
19-34-5w Carman, Steele Creek Prod., Inc. 1 ..... dry
13-34-6w Haglund, Jr., R. C. Tarrant 4 10

Wells completed	8
Production	215
Gas	12,000,000
Dry and abandoned	2

UTAH

Summary of Field Operations

	Comp.	Prod.	Dry Gas	Rgs.	Drlg.	Ttl.
Total Dec.	0	0	0	1	17	18
Total Nov.	0	0	0	1	17	18
Difference	0	0	0	0	0	0

Eastern Fields

Summary of Completed Work

Field—	Comp.	Prod.	Dry	Gas
Bradford	98	189	0	0
Allegany	5	15	0	0
Middle Field	2	½	1	0
Venango-Clarion	4	3½	0	1
Butler-Armstrong	3	6½	0	4
S. W. Penna.	6	280	0	3
Southeast Ohio	24	247	6	4
West Virginia	36	235	5	22
Total Dec.	178	776½	12	14
Total Nov.	166	748½	15	14
Difference	12	28	3	0

Summary of Work Under Way

Field—	Rigs	Drlg.	Ttl.
Bradford	24	75	99
Allegany	1	2	3
Middle Field	0	0	0
Venango-Clarion	3	5	8
S. W. Penna.	4	12	16
Southeast Ohio	8	19	27
West Virginia	27	65	92
Total Dec.	71	182	253
Total Nov.	50	198	248
Difference	21	16	5

WELLS COMPLETED

BRADFORD

Kendall Ref., Bing. 401 ..... wtr
Kendall Ref., Bing. 404 ..... wtr
Lane et al, Bing. 371 1
DeVore Oil, fee 3
G. Van Vechten & Son, fee 5
G. Van Vechten & Son, fee 3
Margaret Colt, trustee, fee 2
H. M. Jack et al, fee 3
Smith Oil Corp., fee ..... wtr
Smith Oil Corp., fee ..... wtr
Dallas Oil Co., fee 2
Esther Oil Co., Bing. 212 2
H. & H. Oil Co., Moody 1
H. & H. Oil Co., Moody 2
D. W. Daly, No. 2 Bing. 369 ..... dry
Forest Oil Corp. 3
Forest Oil Corp. 3
Forest Oil Corp. 3
Forest Oil Corp. (4 wells) ..... wtr
Forest Oil Corp. (4 wells) ..... press
Forest Dev. Corp. 3
Forest Dev. Corp. ..... press
Forest Pet. Corp. 3
Forest Pet. Corp. ..... press
Forest Pet. Corp. 3
Forest Pet. Corp. 3
Forest Pet. Corp. (10 wells) ..... wtr
Forest Pet. Corp. ..... press
Niagara Oil Corp. ..... press
Niagara Oil Corp. (6 wells) 18
Niagara Oil Corp. (2 wells) 6 ..... wtr
Operations on Vacuum lines:
Rice et al, Weston 4
Curtis & Dunlavey Bros., fee 1
Chief Prod. Co., Rasey 1
J. H. Kaufman, est., Rounds ..... wtr
N. V. V. Franchot, Rounds ..... wtr
Grow Farm Oil Co., fee 1
Grace A. Ramsbottom, Harmon & Ramsbottom 1
Ryder Scott Co., fee 10
Pure Penn Oil, Inc., Kinley Oil 3
B. McCaffery et al, McCaffery 1
N. V. V. Franchot, mgr. trustees fee.. 5
First Nat. Bank, Olean, et al, fee 3
First Nat. Bank, Olean, et al, fee 5
Harbel & Meridian 20
Ryder Scott Co., fee 3
Bradford Trans. Co. (54 wells) 162
A. L. and M. L. Lilly, Middaugh 3
Schofferle Bros., Duke & Taggart 1
T. H. Kervin, Kapp 1
C. D. Henline, Moody 1
C. D. Henline, Moody 2
F. E. Baldwin, Baldwin 3
C. E. Potter, Irvine 2
Wommer est., Werthman 3

ALLEGANY

Forest Oil Corp. 3
Forest Oil Corp. ..... press
Forest Oil Corp. (4 wells) ..... wtr
Bradford Transit Co. (4 wells) 12

MIDDLE FIELD

D. T. Duke, Anderson ..... ½
J. L. Maitland, Grandin ..... dry

VENANGO-CLARION

Fryburg Motor Co., Fryburg M. .. ... gas
McElphatrick & Witherup ..... ½
Sweitzer-Campbell et al, Sweitzer 1
D. O. and G. R. Moran, J. F. Moran.. 1

BUTLER-ARMSTRONG

Ritzert Bros. et al, John Lane 4
Peter Bros., S. D. Wise 2
Willis M. Ruby, Adam Ripper ..... ¼

SOUTHWEST PENNSYLVANIA

WELLS COMPLETED

GREENE COUNTY

Lynch, Union Gasoline & Oil Co. 1 ... 15

FAYETTE COUNTY

Wilkey, Carnegie Nat. Gas Co. 1 ..... gas

WASHINGTON COUNTY

Clutter, Myers, Hoskinson et al 1 255
McKennan, E. H. and J. B. Pague 8 .. 10
Baumberger, Carnegie Nat. Gas Co. 1.. gas
Baim, Carnegie Nat. Gas Co. 1 ..... gas

SOUTHEAST OHIO

WELLS COMPLETED

ASHLAND COUNTY

Horn, Gold Crown O. & G. Co. 1 2

BELMONT COUNTY

Lockary, Richland Dev. Asso. 2 10

COLUMBIANA COUNTY

Hahn, L. A. Hoffman 1 25

COSHOCTON COUNTY

Frazee, Preston Oil Co. 2 60
Eppley heirs, Pure Oil Co. 1 ..... gas

CUYAHOGA COUNTY

Liederman, E. Liederman 1 ..... gas

JEFFERSON COUNTY

Hook, O'Day Oil Co. 4 2

LICKING COUNTY

C. F. Mossholder, Emerald Pet. Co. 2 .. 2
Burkholder, M. F. Whitehill 1 ..... dry
Mossholder, Park Natl. Bank, Newark, Ohio, et al 4 30

LORAIN COUNTY

Webber, Wittmer O. & G. Prop. 1 20

MEDINA COUNTY

Weaver, D. A. Lake 11 10
Brown, Curtis & Eaken 11 5
Miller, E. R. Edson & Son Co. 38 .. 3

MONROE COUNTY

Hawkins, John Lumbatis et al 1 10

MUSKINGUM COUNTY

Wilson, Atha Oil Co. 1 ..... gas
Tumblin, Atha Oil Co. 1 ..... dry
Sheppard, Emmett Sheppard 1 66

NOBLE COUNTY

Brinkmeir, D. J. Peaker et al 1 ..... dry

TUSCARAWAS COUNTY

Asher, Gordon Oil Co. No. 3 et al 1 .... dry

VINTON COUNTY

Clark, Powers O. & G. Co. 10 2
Eggleston, Kachelmacher estate et al 1 dry
Gaskill, B. J. Henry et al 1 ..... dry

WASHINGTON COUNTY

King heirs, J. T. Campbell et al 1 .... gas

WEST VIRGINIA

WELLS COMPLETED

BOONE COUNTY

Broun-Cochran, Columbian Carbon Co. 5 gas
Pickens, Cambridge Gas Co. 7 ..... gas

CABELL COUNTY

Fessenmyer Brewery, Lusher Bros. 1 .. gas
Ferguson, W. Va. Gas Corp. 1 ..... gas

CALHOUN COUNTY

Fleming, C. B. Lewis 1 3
White, Poling & Mollahan 2 ..... gas
Wilson, Poling & Mollahan 2 ..... gas
Wright, M. V. Burt et al 1 ..... gas
Bennett, F. F. McIntosh 2 ..... gas
Slider, Southeastern Gas Co. 3 ..... gas
Cottrell, Everett Starcher et al 1 .... gas
Hopkins, Grant Fowler et al 1 ..... dry
Hughes, M. F. Crawley 1 ..... dry

DODDRIDGE COUNTY

Williams, Clifton O. & G. Co. 1 ..... gas
Minear, Wm. Doppleman et al 2 ..... gas
Coulehan, Philadelphia Oil Co. 6 5

GILMER COUNTY

Crabb, Clem S. Morris 1 ..... gas
Taggart, McCall et al 1 ..... dry
Gainer, Clem Morris et al 3 ..... gas

KANAWHA COUNTY

Queen Land Co., Columbian Carbon 11. gas

LINCOLN COUNTY

Burton, United Fuel Gas Co. 4,383 .... gas

MARSHALL COUNTY

Williams, G. B. and A. B. Patterson 2. gas

MONONGALIA COUNTY

Marshall, Browns Run O. & G. Co. 2 .. gas

RITCHIE COUNTY

McGinnis, J. G. Graham 2 ..... gas
Fox, C. F. Vincent & Co. 3 125
C. Ball, Richard's Farm Oil Co. 3 20
Newbrough, Big Four Drlg. Co. 1 ..... gas
Hyman, W. H. Bickle 1 ..... gas
Eddy, Welch Oil Co. 1 1
Scadden heirs, C. F. Egan et al 1 .... dry
Maloy, R. B. Roberts 1 ..... gas
Satterfield, Elder & Louden 4 50

ROANE COUNTY

Riddle, Reedy O. & G. Co. 5 25

TYLER COUNTY

Hess, Hess O. & G. Co. 1 1
Hill, Ohio O. & G. Co. 1 ..... dry

WIRT COUNTY

Hall, Glen W. Roberts 3 5

Lima Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry Gas	Rigs	Drg.	Ttl.
Wood	1	0	1	0	3	3
Hancock	0	0	0	0	1	1
Allen	0	0	0	0	2	2
Auglaize	0	0	0	0	2	2
Mercer	0	0	0	0	1	1
Darke	0	0	0	0	1	1
Sandusky	0	0	0	0	4	4
Lucas	0	0	0	0	1	1
Ottawa	0	0	0	0	1	1
Seneca	0	0	0	0	4	4
Wyandot	3	75	1	1	2	9
Hardin	0	0	0	0	1	0
Williams	0	0	0	0	0	1
Total Dec.	4	75	2	1	3	30
Total Nov.	18	291	4	6	3	22
Difference	14	216	2	5	0	8

WELLS COMPLETED

WOOD COUNTY

Troy—G. S. Baker, R. M. Bell & Co. 1 dry

Lake—Hattie Kuemmel, Lantz, Schulte & Co. 1 ..... abd
Middleton—G. A. Shoemaker, Ohio Oil 1, 3, 4, 5, 6, 7 ..... abd

Wells completed 1
Dry 1
Abandoned 7

HANCOCK COUNTY

Van Buren—A. Knoke, Ohio Oil 2 ..... abd
James Decker, Ohio Oil 8, 10 ..... abd
McConica-Crosley, Ohio Oil 16, 17 ..... abd

Abandoned 5

SANDUSKY COUNTY

Scott—Geo. Zimmerman, Elic & Edward T. Whalen 6 ..... abd
Geo. Zimmerman No. 2, Elic & Edward T. Whalen 6 ..... abd

Abandoned 2

LUCAS COUNTY

Oregon—Thos. Garvey, Geo. E. Mong 4. abd
S. B. Tobias, Geo. E. Mong 7 ..... abd

Abandoned 2

WYANDOT COUNTY

Crane—Francis Huffman, Crane Township Oil & Gas 1 75
A. E. Myers, Pitt Oil & Gas 1 ..... gas
Pitt—W. H. Castanein, Newcomer & Co. 1 ..... dry

Kentucky Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Ohio	9	177	5	4	0	17	17
Daviess	0	0	0	0	0	16	16
Hancock	6	295	1	0	0	6	6
Muhlenburg	0	0	0	0	0	3	3
Henderson	2	5	1	0	0	0	0
McLean	0	0	0	0	0	8	8
Bath	0	0	0	0	0	1	1
Lee	0	0	0	0	0	1	1
Knox	0	0	0	0	0	1	1
Edmonson	0	0	0	0	0	1	1
Todd	0	0	0	0	0	1	1
Grayson	0	0	0	0	1	1	2
Warren	0	0	0	0	0	2	2
Allen	1	0	1	0	0	2	2
Total Dec.	18	477	8	0	1	60	61
Total Nov.	31	633	16	0	2	53	55
Difference	13	156	8	0	1	7	6

WELLS COMPLETED

OHIO COUNTY

Hartford—P. R. Kelley, Chas. E. Armstead 1 ..... dry
E. E. Fuqua, F. M. and J. M. Meredith 6 15
T. Huff, Dewey Huff & Co. 2 ..... dry
O. T. Burdette 65-ac., Mecca Oil 2 .. 60
M. E. Beckett, Cumberland Pet. Co. 1 dry
Souder, Hupp, Duff & Co. 2 ..... dry
E. C. Dunn, Stewart Weir & Co. 5 .. 100
Ida Kelley, M. A. and Grace Carpenter 6 2
E. C. Hartford, Snowden-McSweeney Co. 3 ..... dry

Wells completed 9
Production 177
Dry 5

HANCOCK COUNTY

Pellville—Ollie Bolling, D. T. Bolling 3. 100
R. A. Richards, James C. Ellis 2 100
Lewis Richards, D. T. Bolling & Co. 4 dry
Hallie R. Mason, Jas. C. Ellis 2 10
Hallie R. Mason, Jas. C. Ellis 3 50
Hallie R. Mason, Jas. C. Ellis 4 35

Wells completed 6
Production 295
Dry 1

HENDERSON COUNTY

Greenville—W. Basket, Imperial O. & G. Products Co. 1 ..... dry
S. E. King, Clark Drlg. Co. 1 5

Wells completed 2
Production 5
Dry 1

ALLEN COUNTY

Scottsville—O. V. Lyle, Ross, Work & Co. 1 ..... dry

Indiana Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Gibson	3	220	0	2	0	2	2
Pike	5	0	2	3	1	4	5
Daviess	2	2	1	0	0	5	5
Sullivan	0	0	0	0	0	1	1
Warrick	0	0	0	0	0	2	2
Spencer	0	0	0	0	0	4	4
Perry	4	100	0	1	0	2	2
Randolph	0	0	0	0	0	1	1
Greene	0	0	0	0	0	1	1
Harrison	0	0	0	0	0	2	2
St. Joe	1	0	1	0	1	0	1
Jay	0	0	0	0	0	1	1
Porter	0	0	0	0	0	1	1
Stark	0	0	0	0	0	1	1
Martin	1	0	1	0	0	1	1
Kosciusko	1	0	1	0	0	0	0
Vanderburg	4	50	1	0	0	8	8
Henry	1	0	0	1	0	1	1
Shelby	1	0	1	0	0	1	1
Hendricks	0	0	0	0	0	1	1
Knox	0	0	0	0	0	1	1
Total Dec.	23	272	8	7	2	40	42
Total Nov.	20	195	11	3	3	34	37
Difference	3	77	3	4	1	6	5

WELLS COMPLETED

GIBSON COUNTY

Washington—P. A. Hayden, Ohio Oil 4. abd
E. & S. Ewing, Wabash Public Service 1 ..... abd
W. S. Jones, Wabash Public Service 1 abd
Elmer Hunt, Big Four Oil & Gas 2.. 120
Armstrong heirs, G. B. Shoelty 1 .... gas
M. L. Gaston, Joe Young & Co. 1 .... gas
Center—Dave Hutchinson, Wabash Public Service 1, 2, 4 ..... abd
W. C. Reaves, Wabash Public Service 2, 3, 4, 5 ..... abd
O. M. Welborn, Wabash Publi: Service 1, 2 ..... abd

Wells completed 3
Production 120
Gas 2
Abandoned 12

PIKE COUNTY

Washington — Chas. Lucas, Harry N. Bell 3 ..... gas
Helen Smith, Claud E. Noble & Co. 3 gas
W. Boger, H. H. Risher 2 ..... gas
Damewood, Dr. C. C. Taliaferro, Jr. 1 dry
Patoka—Riley Starmont, Ohio Oil 5 ... abd
Madison—R. & C. Stewart, Wiser Oil 1. dry
Clay—S. T. Ramble, Murphy Oil 8 ..... abd
John Carter, H. H. Risher 1 ..... abd
Logan—E. G. Wilson, Wiser Oil 2, 3 .. abd

Wells completed 5
Gas 3
Dry 2
Abandoned 5

DAVIESS COUNTY

Veale—Ross Bros., H. House 1 ..... dry
Edith White, C. H. Parrott & Co. 2 .. 2

Wells completed 2
Production 2
Dry 1

PERRY COUNTY

Clark — Joe Minier, Bankable Oil & Smith 1 ..... gas
A. Franchville, Anderson Creek Oil & Gas 6 30
A. Franchville, Anderson Creek Oil & Gas 7 40
A. Franchville, Anderson Creek Oil & Gas 8 30

Wells completed 4
Production 100
Gas 1

ST. JOE COUNTY

Harris—Sones, Shrock & Co. 1 ..... dry

MARTIN COUNTY

Perry—John Larkins, Sproul & Co. 4 .. dry

KOSCISUKO COUNTY

Van Buren—W. O. Wherling, Van Buren Oil 1 ..... dry

HENRY COUNTY

Wayne—John Chew, Knightstown Nat. Gas Co. 3 ..... gas

VANDERBURG COUNTY

Center—Evansville Gun Club, John L. Drake & Co. 3 ..... dry
Helen Murphy, Foreman & Miller 2.. 20
Helen Murphy, Foreman & Miller 3.. 20
Oscar Euler, Perry Tichenour 1 10

Wells completed 4
Production 50
Dry 1

SHELBY COUNTY

Van Buren—Snider, J. Harve Snider 2.. dry

Central Ohio Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Ashland	2	7	0	1	1	1	2
Medina	6	23	4	0	1	1	2
Lorain	3	25	1	1	1	5	6
Holmes	0	0	0	0	0	3	3
Richland	0	0	0	0	0	1	1
Wayne	1	0	0	1	1	1	2
Summitt	2	0	1	1	1	1	2
Fairfield	2	0	1	1	1	2	3
Knox	0	0	0	0	1	5	6
Coshocton	2	58	0	0	2	3	5
Huron	0	0	0	0	0	1	1
Cuyahoga	1	0	0	1	0	0	0
Licking	5	10	3	1	0	6	6
Muskingum	1	43	0	0	0	8	8
Athens	3	0	1	2	1	12	13
Tuscarawas	1	3	0	0	1	6	7
Stark	8	0	1	7	0	22	22
Belmont	7	0	3	4	0	7	7
Guernsey	0	0	0	0	1	8	9
Crawford	0	0	0	0	0	1	1
Gallia	0	0	0	0	0	3	3
Scioto	0	0	0	0	0	1	1
Pike	0	0	0	0	0	2	2
Carroll	0	0	0	0	0	4	4
Vinton	3	2	2	0	0	0	0
Lawrence	3	2	2	0	0	4	4
Total Dec.	50	173	19	20	12	108	129
Total Nov.	64	168	15	41	19	103	122
Difference	14	5	4	21	7	5	2

WELLS COMULETED

ASHLAND COUNTY

Lake—Geo. Horn, Gold Crown Oil & Gas Co. 3 7
Harry Horn, Gold Crown Oil & Gas 8 gas

Wells completed 2
Production 1
Gas 1

MEDINA COUNTY

Chatham—Thos. Brown, Jr., Curtis & Eaken 11 5
E. G. Miller, E. R. Edson & Co. 38 .. 3
Montville—Daugherty, Clyde Daugherty 1 ..... dry
Litchfield—Severcool, D. A. Lake 10, 11 dry
Severcool, D. A. Lake 12 15

Wells completed 6
Production 23
Dry 3

LORAIN COUNTY

Eaton—Frank Kovarik, McMillan & Co. 4 ..... gas
Grafton—Phil Webber, Wittmer Oil & Gas 1 25
George Myers, Wittmer Oil & Gas 1.. dry

Wells completed 3
Production 25
Gas 1
Dry 1

SUMMITT COUNTY

Green—Mrs. F. Snider, East Ohio Gas 1 dry
F. N. Steiner, East Ohio Gas 1 ..... gas

Wells completed 2
Gas 1
Dry 1

WAYNE COUNTY

Congress—Jennie DeMay, Ohio Fuel Gas 1-5,740 ..... gas

FAIRFIELD COUNTY

Berne—Johnson, City Nat. Gas Works 1 dry
Harvey Shull, Ohio Fuel Gas 4-5,773.. gas

Wells completed 2
Gas 1
Dry 1

COSHOCTON COUNTY

Newcastle—Wm. Frazee, Preston Oil Co. 2-1,526 55
Clark—A. C. Epply, Pure Oil 3 3

Wells completed 2
Production 58

CUYAHOGA COUNTY

Evergreen—Fee, E. Liederman 1 ..... gas

LICKING COUNTY

Mary Ann—H. L. Jones, Armbruster & Strickler 2 ..... gas
Perry—J. C. Burkholder, Whitehill Oil 7 dry
Lydia Martin, McClay Bros. 3 ..... dry
Fallsburg—Cal Mossholder, Emerald Pet. Co. 2 10
Hopewell—Geo. W. Keager, Wehrle Gas Co. 2 ..... dry

Wells completed 5
Production 19
Gas 1
Dry 3

MUSKINGUM COUNTY

Jackson—Emmet Shepard, Pure Oil 1 .. 43

ATHENS COUNTY

Lodi—A. C. Creamer, Ohio Fuel Gas Co. 1-5,759 ..... gas
Cora M. Evans, Ohio Fuel Gas 1-5,770 gas
Rome—Williams, Gibson & Co. 9 ..... dry

TUSCARAWAS COUNTY

Washington—Geo. W. Asher, Hopewell Oil & Gas 3 3

STARK COUNTY

Jackson—Cora L. Clay, Brendel Producing 1 ..... dry
Plain—C. L. Wood, Brendel Producing 1 gas
Jas. H. McDowell, Brendel Prod. 2.. gas
Fee, Hoover Dev. Co. 1 ..... gas
Hoover, Harry W. Hoover 1 ..... gas
J. H. Schneider, Peiffer & Co. 1 ..... gas
Levi A. Stoner, Cable & Campbell 1. gas
A. E. Hockwalt, East Ohio Gas 1 .. gas

Wells completed 8
Gas 7
Dry 1

BELMONT COUNTY

Somerset—J. A. Vogt, Ohio Fuel Gas 2-5,767 ..... gas
S. P. and E. Butler, Geo. Washmuth & Co. 3 ..... gas
Warren—Sarah E. Douglass, Robt. Lewis & Co. 3 ..... gas
Union—M. L. Bell, Ohio Fuel Gas 2-5,774 dry
J. T. Murphy, O. K. Oil & Gas 3 .... dry
Thomas Tenley, R. W. Dunn & Co. 2.. dry
Bessie H. Welton, John P. Delhie 1.. gas

Wells completed 7
Gas 4
Dry 3

VINTON COUNTY

Knox—C. S. Clark, Powers & Co. 10 2
P. and E. Gaskill, Co-operative Oil & Gas 1 ..... dry
Brown—Eggelston, Kachelmacher Estate 1 ..... dry

Wells completed 3
Production 2
Dry 2

LAWRENCE COUNTY

Rome—B. F. McCown, C. C. Wolfe & Co. 1 ..... dry
Union—Del Clark, Chartiers Oil & Gas 1 2
Wilbur Day, Ware & Co. 1 ..... dry

Wells completed 3
Production 2
Dry 2

Michigan Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Midland	13	6,938	1	0	31	45	76
Isabella	9	1,963	1	1	30	16	46
Clare	0	0	0	0	3	1	4
Oceana	0	0	0	0	5	13	18
Lake	0	0	0	0	0	2	2
Iosco	0	0	0	0	1	0	1
Gratiot	0	0	0	0	2	2	4
Cass	0	0	0	0	3	1	4
Kent	0	0	0	0	1	2	3
Emmett	0	0	0	0	1	1	2
Saginaw	0	0	0	0	3	3	6
Montmorency	0	0	0	0	3	0	3
Sanilac	0	0	0	0	3	0	3
Newyago	0	0	0	0	0	2	2
Shiawassee	0	0	0	0	1	3	4
Allegan	0	0	0	0	1	2	3
Livingston	0	0	0	0	1	2	3
Osceola	0	0	0	0	1	1	2
Alpena	0	0	0	0	1	1	2
Cheboygan	0	0	0	0	0	1	1
Oakland	0	0	0	0	0	1	1
Macomb	0	0	0	0	1	1	2
Gennessee	0	0	0	0	1	0	1
Mecosta	0	0	0	0	0	1	1
Antrim	1	0	1	0	0	0	0
Monroe	0	0	0	0	0	1	1
St. Clair	0	0	0	0	3	0	3
Muskegon	1	15	0	0	8	7	15
Ogemaw	2	806	0	0	5	7	12
Montcalm	1	150	0	0	0	1	1
Lapeer	0	0	0	0	0	1	1
Gladwin	0	0	0	0	1	0	1
Arenac	0	0	0	0	1	0	1
Wayne	0	0	0	0	9	1	1
Total Dec.	27	9,866	3	1	111	119	230
Total Nov.	52	43,491	12	1	113	114	227
Difference	25	33,625	9	0	2	5	3

WELLS COMPLETED

MIDLAND COUNTY

Porter—H. Narthup, McClanahan Oil 1. 460
G. R. Hathaway, Geo. C. Hanners 1..2000

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Chas. Hill, Pure Oil 5 123
J. H. Miller, Pure Oil 2 600
Floyd Younglove, Pure Oil 1 1450
W. Neitzke, Pure Oil 1 190
W. Neitzke, Pure Oil 2 750
Jasper—Frank Sinif, Pure Oil 2 700

Wells completed 13
Production 6938
Dry 1

ISABELLA COUNTY
Vernon—E. Willey, Ide Oil & Gas Corp. 1 300
D. Carmichael, J. V. Wicklund 3 200
A. & A. Thayer, Mammoth Pet. Corp. 2 350
A. & A. Thayer, Mammoth Pet. Corp. 4 690
Icem C. Sients, Trio Oil 2 63
Verretta, Garfield Oil & Gas 1 350
J. Maher, Fred W. Turner & Co. 1 .. dry
Denver—P. J. Marthey, Michigan G. & O. Corp. 4 100
Broomfield—Fred Winters, Pure Oil 1.. gas

Wells completed 9
Production 1963
Dry 1

ANTRIM COUNTY
Jordon—Adam Skrotsko, Eddie Self & Co. 1 ..... dry

MUSKEGON COUNTY
Muskegon—John Torrent Estate, Jetter Oil 1 15

OGEMAW COUNTY
West Branch — Ogemaw Country Club, Theodore & Roosevelt Co.'s 1 50
A. Reinhardt, Pure Oil 1 750

Wells completed 2
Production 800

MONTCALM COUNTY
Home—H. P. Christian heirs, Daily Oil Co. 1 150

Illinois Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Clark	0	0	0	0	1	1	
Crawford	0	0	0	0	1	1	2
Marion	1	9	1	0	0	1	1
Boone	0	0	0	0	1	0	1
Jefferson	0	0	0	0	0	1	1
Clinton	0	0	0	0	0	1	1
Bond	0	0	0	0	9	2	2
Madison	0	0	0	0	0	1	1
Macoupin	0	0	0	0	0	1	1
Coles	0	0	0	0	0	1	1
Total Dec.	1	0	1	0	2	10	12
Total Nov.	0	0	0	0	2	11	13
Difference	1	0	1	0	0	1	1

WELLS COMPLETED
MARION COUNTY
Sandoval—George Vogt, Bryant Lee & Co. 1 ..... dry

LAWRENCE COUNTY
Petty—E. L. Gray, Ohio Oil Co. 7 ..... abd
John W. Bolles, No. 2, Ohio Oil 8 ... abd
N. J. Updike & Co., Ohio Oil 3 ..... abd
Dennison—Simon Seed, John Phipps 1, 2 abd
H. D. Hinkle, Silurian Oil 3 ..... abd

Abandoned 6

Central West Fields

(Continued from Page 55)

tion 4, Avon Township, drilled in a dry hole. Wittmer Oil & Gas Co.'s No. 1 on the George Haunesser farm, Lot 38, Grafton Township, is drilling and the same company has a rig on the Barney A. Rothery farm, Lot 65, same township.

In Summitt County, East Ohio Gas Co. is drilling on the Everette Bexler farm, Section 17, Springfield Township. Wiser Oil Co. had its rig destroyed by fire in No. 2 well on the Dayton A. Doyle farm, Section 5, same township, and a new rig is being constructed. East Ohio Gas Co. is drilling on the Ross Lamb farm, Section 17, Green Township, same county.

In Stark County, Cunningham Natural Gas Co.'s No. 2 on the John Marquart farm, Section 9, Plain Township, is an average gas well at a depth of 4,496 feet. Brendel Production Co. is drilling Nos. 2 and 3 on the Canton Suburban Realty Co.'s property, Section 20, same township. East Ohio Gas Co. has rig on Canton Cemetery Association's tract, same section, Cable & Campbell have a rig in for No. 4 on the Canton Suburban, Section 20, same township. In Jackson Township, Ohio Fuel Gas Co. has a rig for No. 2 on the Gertrude Marchand farm, Section 11, Jackson Township.

In Belmont County, R. W. Dunne and others' No. 2 J. C. Walker farm, Section 15, Union Township, is a gas well at 1,073 feet. Robert Morgan and others' test on the F. A. Magee farm, Section 20, Richland Township, is a gas well at 1,073 feet.

In Guernsey County C. C. Wharton's test on the Ellis B. Simms farm, Section 16, Adams Township, is a fair gas producer at 600 feet. C. E. Quillan and others' No. 3 on the Quillan farm, Section 10, Wheeling Township, produced an initial of 13 bbls. at 3,424 feet.

In Tuscarawas County, D. W. Hunt and others made a location on the Lessen B. Zimmerly farm, Section 21, Perry Township.

In Licking County, Wehrle Gas Co. drilled in a gas well on the Jennie Darnes farm, in the third-quarter section of Madison Township, at 2,004 feet. Upham Gas Co.'s No. 2 on the Charles Babcock farm, in Section 14, Fallsburg Township, produced 10 bbls. initial. Blue Rock Oil Co. has a rig up for No. 8 on the Sam Mossholder farm. Section 13, same township. Ridgeway and others are drilling on the Besse Hoyt farm, Section 17, Perry Township.

In Knox County, Lacnett and others found a dry hole on the Fred Cochran farm, Lot 33, Monroe Township, at 2,624 feet. Ohio Fuel Gas Co. has a rig on the J. Wintermyer farm, Section 14, same township.

In Coshocton County, Hulse-Kundtz, Inc., has a rig in for No. 2 on the Chas M. Dawson farm, Section 17, Perry Township. Preston Oil Co. is drilling below 2,950 feet in No. 1 on the A. Van Winkle farm, Section 2, same township. Leonard Oil Co. has a showing of oil at 3,208-63 feet in No. 4 on the Isaac Norris farm, Section 12, Pike Township, and are arranging to give it a shot.

Emerald Petroleum Co. is arranging to drill its No. 1 on the Eli Frey farm, Section 8, Fallsburg Township, Licking County, from the Berea sand to the Clinton lime, and is doing the same with its No. 1 on the Charles Weekley farm, Section 17, same township.

In Meigs County, Rutland Gas Co.'s No. 4 on the Florence Mutchler farm, Section 9, Rutland Township, is a light gas well at 828 feet. Joe Rubin's No. 3, on the Louisa S. Bryan farm, Section 36, Salisbury Township, made a light gas showing, with a hole full of water at 1,043 feet. Star Mills Co.'s No. 2 on the Rena E. Karr farm, Section 11, Sutton Township, is delayed by casing trouble. Tyree and others' No. 1 on the Mary F. Jividon farm, Section 24, same township, produced 2½ bbls. oil along with a light gas production from the Berea sand from a depth of 1,727 feet. O. D. Jones is moving in a machine for No. 2 on the W. E. McDade farm, Section 13, Lebanon Township, and John Mayer and others are drilling around 150 feet on the Mary F. Jividon farm, Section 24, Sutton Township.

In Fairfield County, City Natural Gas Works is moving in a rig on the Charles Johnson farm, Section 1, Berne Township.

Pure Oil Co. is moving in a rig on the Elva Gardner farm, Section 22, Brush Creek Township, Muskingum County.

INDIANA

The only completion reported from the Indiana Field was O. A. Thayer and others' No. 2 on the Elza Hall farm, Section 14, Busseron Township, Knox County, which was a dry hole at 842 feet.

A. R. Morris and others are shut down at 1,850 feet in their test on the H. B. Brown farm, Section 9, Washington Township, Greene County.

Charles Whitlock and others are shut down in No. 1 on the W. M. Medsker farm, Section 24, Turman Township, Sullivan County, at 1,300 feet.

Wiser Oil Co. is drilling No. 2 on the Stewart Brothers farm, Location 34, Clay Township, Pike County.

ILLINOIS

Richard Eke and others are drilling No. 1 on the H. Klair farm, Section 7, Waid Township, Jasper County. Price & Weger are drilling No. 1 on the H. Stanfield farm, Section 36, Prairie Township, Crawford County.

WILLIAM MATTHEW DIES

CALGARY, Alberta, Jan. 27. — William Matthew, head of the Calgary brokerage firm of Matthew & Bury, died at Calgary recently, aged 58. A native of Scotland, Mr. Matthew during the latter part of his residence at Calgary has been closely identified with oil development in the Turner Valley Field.

TOM WELLMAN DIES

WICHITA FALLS, Tex., Jan. 27.— Tom Wellman, 54, pioneer oil and cattleman of Petrolia, Tex., died in a hospital here. He operated in Wichita, Clay and Young Counties in the North Central Texas district.

IMPORTANT BOOKS
for the Oil Man's Library

"FIELD GEOLOGY"

Geology is an interesting study for anyone. A general knowledge of this subject makes traveling more interesting and has many practical applications to every-day problems. The oil man is particularly interested in geology as applied to the origin, accumulation and production of oil and gas. It is really a basic requirement for all interested in this business, because even a person in the marketing department or a user of petroleum products should have some general knowledge of the source of the crude oil from which gasoline, lubricants and other petroleum products are derived.

Dr. F. H. Lahee, chief geologist of the Sun Oil Co., Dallas, Tex., has recently issued the third edition of his very readable book, "Field Geology." This book treats the subject of geology from the field standpoint. It is intended as both a textbook and a pocket manual. As a manual it is of service to students of geology, and also to mining engineers, civil engineers and all others whose interests bring them in touch with geologic problems.

In the first 12 chapters geologic structures and topographic forms are covered. Here the aim has been to describe together phenomena which in certain respects resemble one another, but has been empirical rather than genetic. To assist the reader to identify various forms of structures, a number of tables or keys have been given.

In the last six chapters are given descriptions of methods followed in geologic surveying, the nature and construction of maps, sections, and block diagrams, the interpretation of topographic and geologic maps, the solution of certain geologic computations, and the preparation of geologic reports.

Several tables of practical value and a very complete bibliography have been included in an appendix which makes the use of the book simple, and if detailed study of many of the subjects treated in this book is desired the reference to special articles will prove of much assistance.

Doctor Lahee is well known to the oil industry and is an advanced student of geology as applied to oil field problems. He has viewed those problems from both a scientific and economic angle and his conclusions are well taken and should prove of value to all who have any interests in the future development of the petroleum industry.

The third edition has special reference to several methods of scientific research in structural geology that were developed since the previous edition was published. This subject is treated in such a manner that much information is given in a limited space, and many questions asked by the layman, as well as the experienced geologist, are answered.

"Field Geology" may be purchased through the Book Department of The Oil and Gas Journal at the regular price of $5 postpaid, payable by check or money order when book is ordered.

(This review, printed in 1933, is reprinted for the benefit of new subscribers.)

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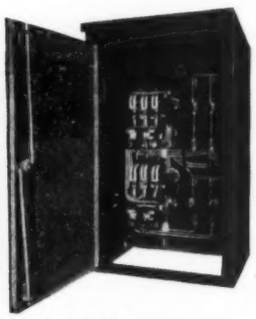

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Oil Country Specialties Mfg. Co., The .....
Oil Equipment & Engineering Exposition .....
Oil Well Supply Co. .....
Oklahoma Gas & Electric Co. ...

P
Parkersburg Rig & Reel Co., The
Patterson-Ballagh Corp. .....
Penberthy Injector Co. .....
Petroleum Equipment Co. .....
Petroleum Rectifying Co. .....
Pittsburgh Steel Co. .....
Powell Co., The Wm. .....
Price-Trawick, Inc. .....
Pure Oil Co., The .....

R
Reid, Joseph, Gas Engine Co. ....
Republic Steel Corp. .....
Roebling's, John A., Sons Co. ....
Ross, Inc., Dewey T. .....
Ryerson & Son, Inc., Joseph T. .

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Shaffer Tool Works .....
Shell Union Oil Corp. .....
Sinclair Refining Co. .....
Smooth-On Mfg. Co. 51
South Chester Tube Co. .....
Sperry-Sun Well Surveying Co. ..
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Tulsa Oil Thief Co. .....
Twin Disc Clutch Co. .....

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Universal Oil Products Co. 17

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